

## **CHAPTER 4**

### **POINT AND NONPOINT SOURCE CHARACTERIZATION OF THE LOWER TENNESSEE RIVER WATERSHED**

#### **4.1 Background.**

#### **4.2. Characterization of HUC-10 Subwatersheds**

##### **4.2.A. 0602000105 (Tennessee River)**

##### **4.2.B. 0602000107 (North Chickamauga Creek)**

##### **4.2.C. 0602000108 (South Chickamauga Creek)**

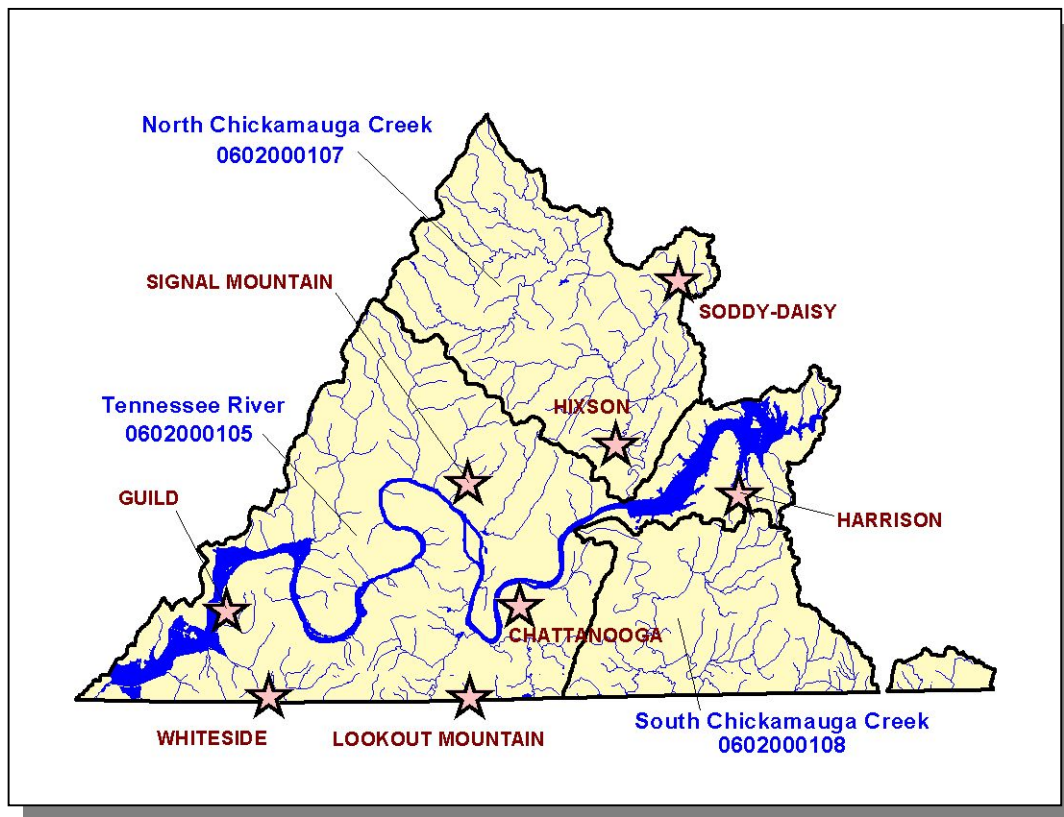
**4.1. BACKGROUND.** This chapter is organized by HUC-12 subwatershed, and the description of each subwatershed is divided into four parts:

- i. General description of the subwatershed
- ii. Description of point source contributions
- ii.a. Description of facilities discharging to water bodies listed on the 2004 303(d) list
- iii. Description of nonpoint source contributions

The Tennessee portion of the Lower Tennessee River Watershed (HUC 06020001) is composed of one HUC 10 (10-digit) subwatershed and seven HUC-12 subwatersheds.

Information for this chapter was obtained from databases maintained by the Division of Water Pollution Control or provided in the WCS (Watershed Characterization System) data set. The WCS used was version 2.0 (developed by Tetra Tech, Inc for EPA Region 4) released in 2003.

WCS integrates with ArcView® v3.x and Spatial Analyst® v1.1 to analyze user-delineated (sub)watersheds based on hydrologically connected water bodies. Reports are generated by integrating WCS with Microsoft® Word. Land Use/Land Cover information from 1992 MRLC (Multi-Resolution Land Cover) data are calculated based on the proportion of county-based land use/land cover in user-delineated (sub)watersheds. Nonpoint source data in WCS are based on agricultural census data collected 1992–1998; nonpoint source data were reviewed by Tennessee NRCS staff.



**Figure 4-1. The Group 4 Portion of the Tennessee Portion of the Lower Tennessee River Watershed Consists of three USGS-Delineated Subwatersheds (10-Digit Subwatersheds). Locations of Chattanooga, Guild, Harrison, Hixson, Lookout Mountain, Signal Mountain, Soddy-Daisy, and Whiteside are shown for reference.**

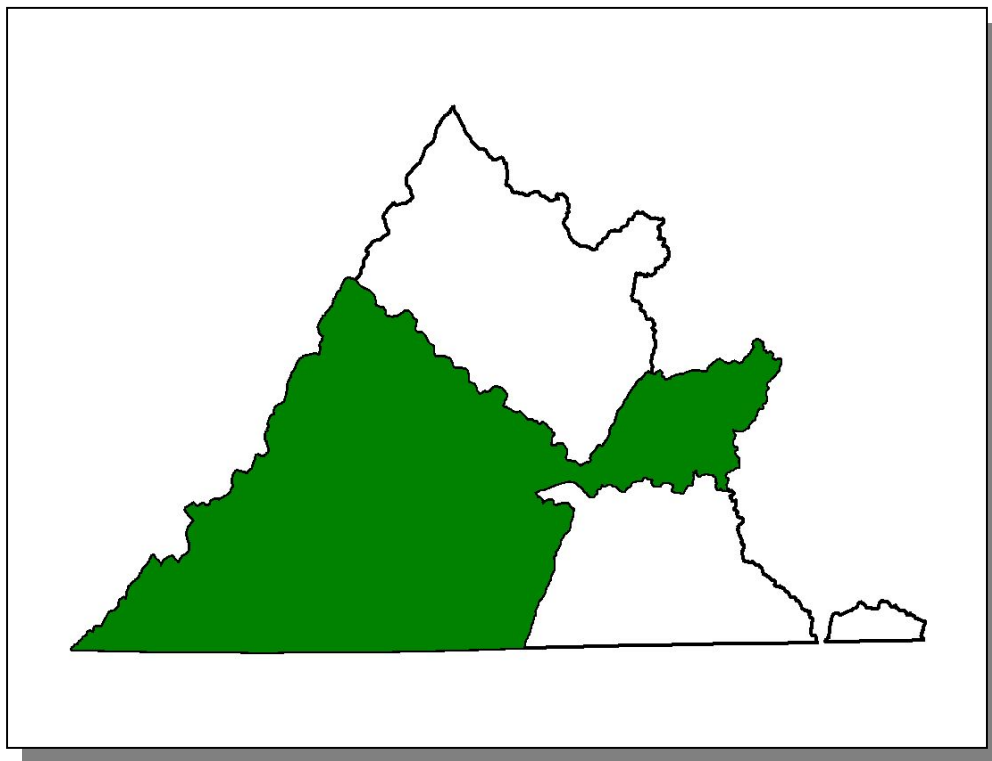
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**4.2. CHARACTERIZATION OF HUC-10 SUBWATERSHEDS.** The Watershed Characterization System (WCS) software and data sets provided by EPA Region IV were used to characterize each subwatershed in the Group 4 portion of the Tennessee portion of the Lower Tennessee River Watershed.

HUC-10	HUC-12
0602000105	060200010501 (Tennessee River)
	060200010502 (Tennessee River)
	060200010503 (Chattanooga Creek)
	060200010504 (Lookout Creek)
	060200010505 (Suck Creek)
	060200010506 (Tennessee River)
	060200010507 (Tennessee River)
0602000107	060200010701 (Upper North Chickamauga Creek)
	060200010702 (Lower North Chickamauga Creek)
0602000108	060200010801 (East Chickamauga Creek)
	060200010802 (Little Chickamauga Creek)
	060200010803 (West Chickamauga Creek)
	060200010804 (South Chickamauga Creek)

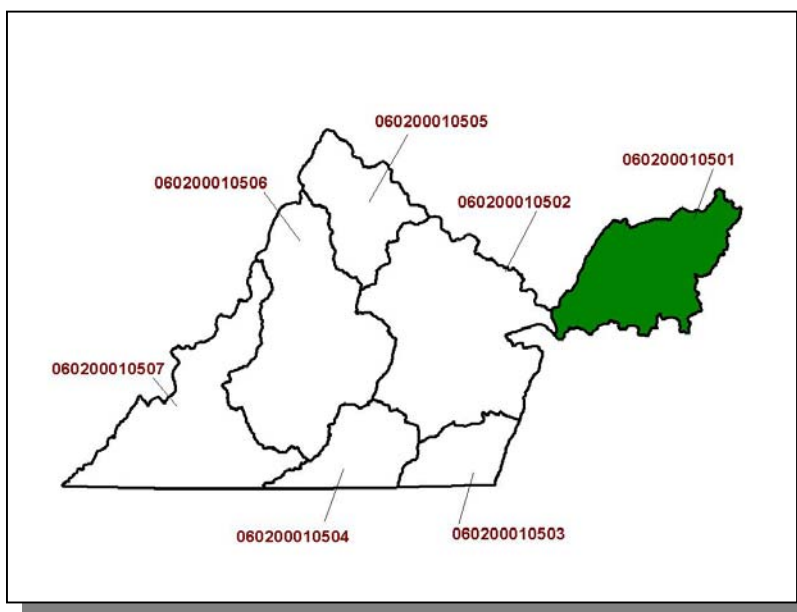
**Table 4-1. HUC-12 Drainage Areas are Nested Within HUC-10 Drainages.** NRCS worked with USGS to delineate the HUC-10 and HUC-12 drainage boundaries.

**4.2.A. 0602000105.**



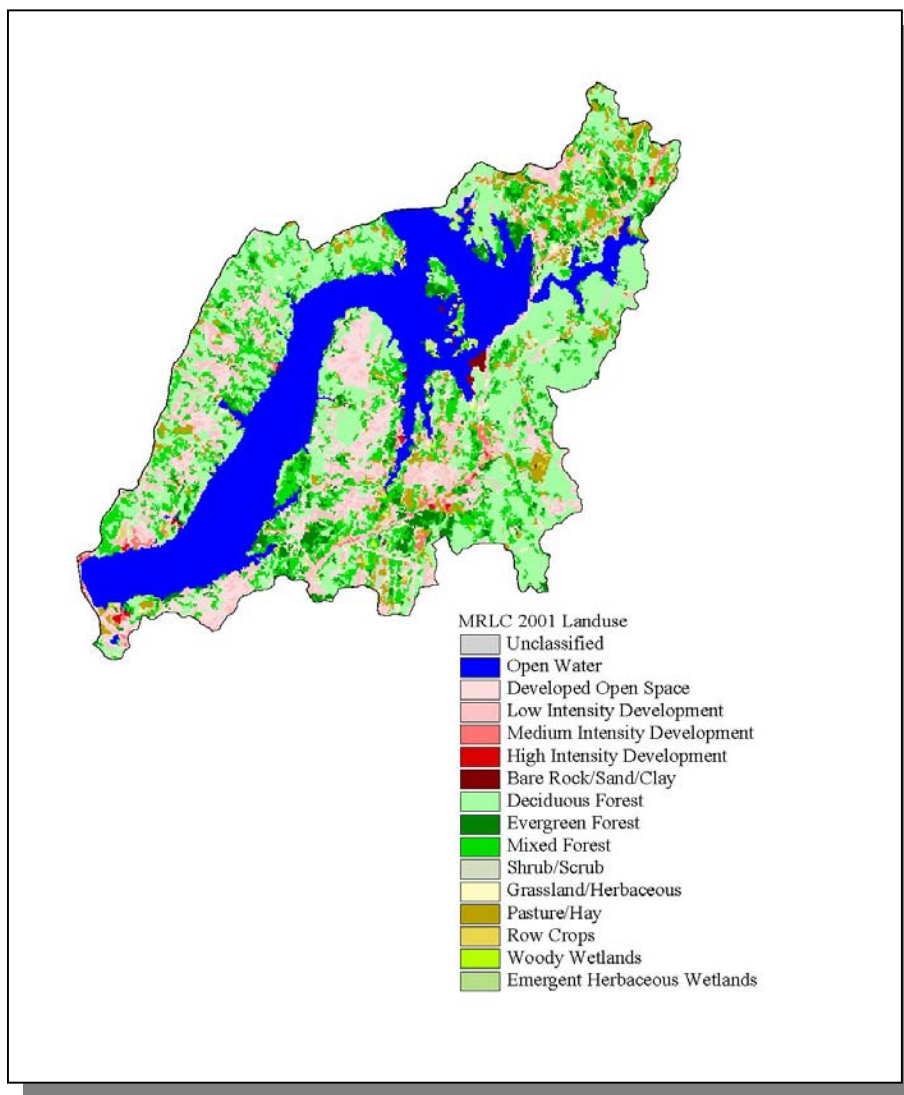
**Figure 4-2. Location of Subwatershed 0602000105.** All Group 4 Lower Tennessee River HUC-10 subwatershed boundaries in Tennessee are shown for reference.

**4.2.A.i. 060200010501 (Tennessee River).**



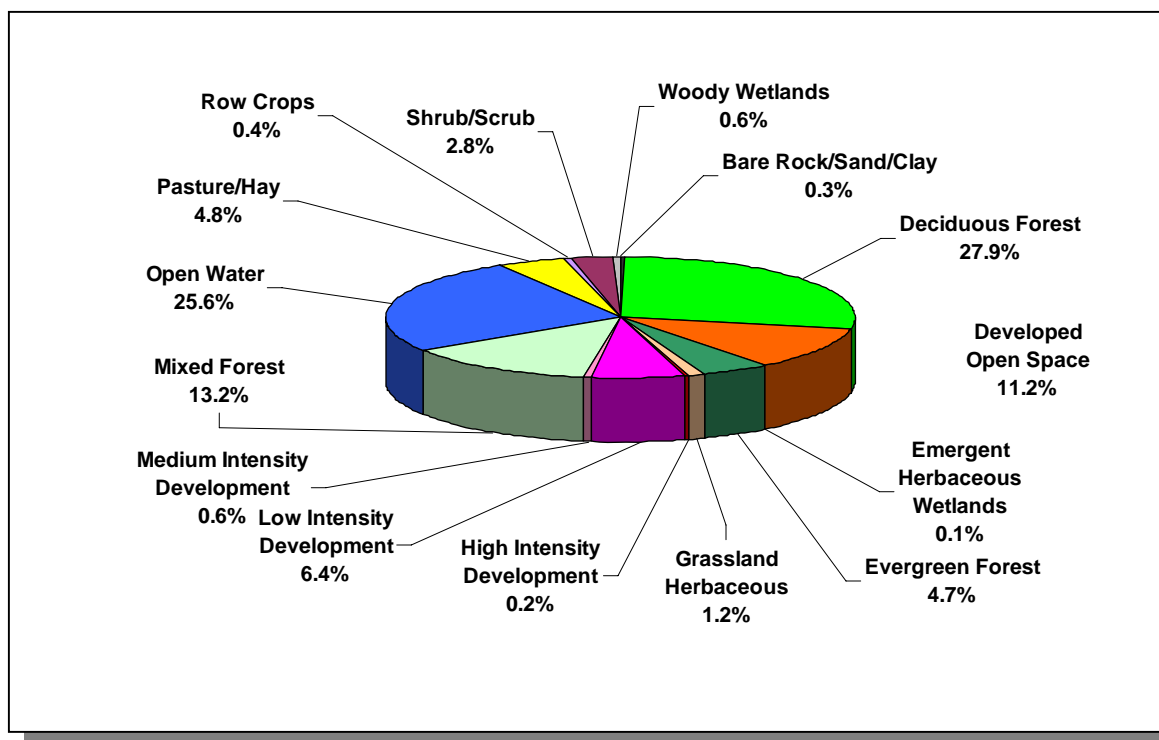
**Figure 4-3. Location of Subwatershed 060200010501.** All Group 4 Lower Tennessee River HUC-12 subwatershed boundaries in Tennessee are shown for reference.

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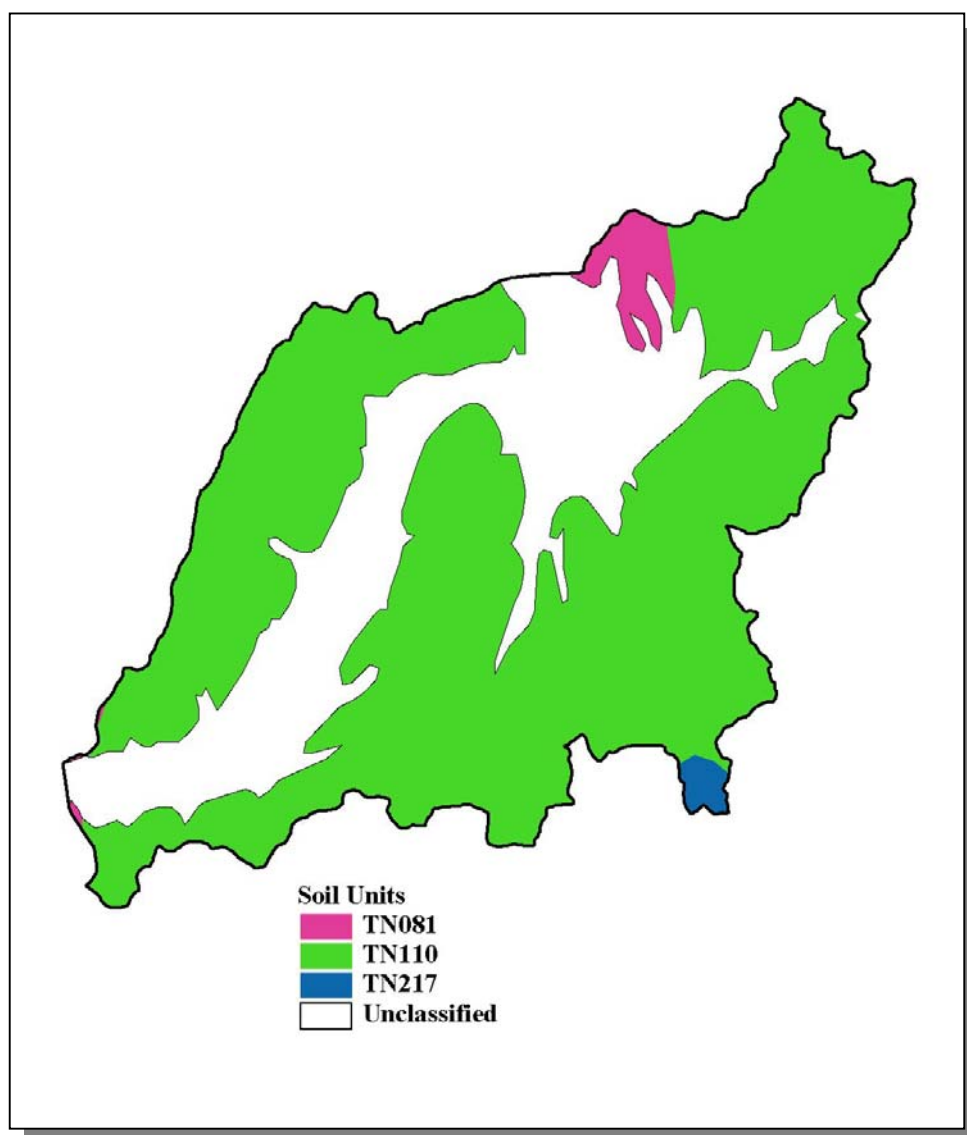


**Figure 4-4. Illustration of Land Use Distribution in Subwatershed 060200010501.**

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**Figure 4-5. Land Use Distribution in Subwatershed 060200010501.** More information is provided in Appendix IV.



**Figure 4-6. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060200010501.**

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN081	5.00	C	1.41	5.48	Silty Loam	0.35
TN110	0.00	B	2.22	4.96	Loam	0.31
TN217	0.00	C	2.34	5.32	Loam	0.35

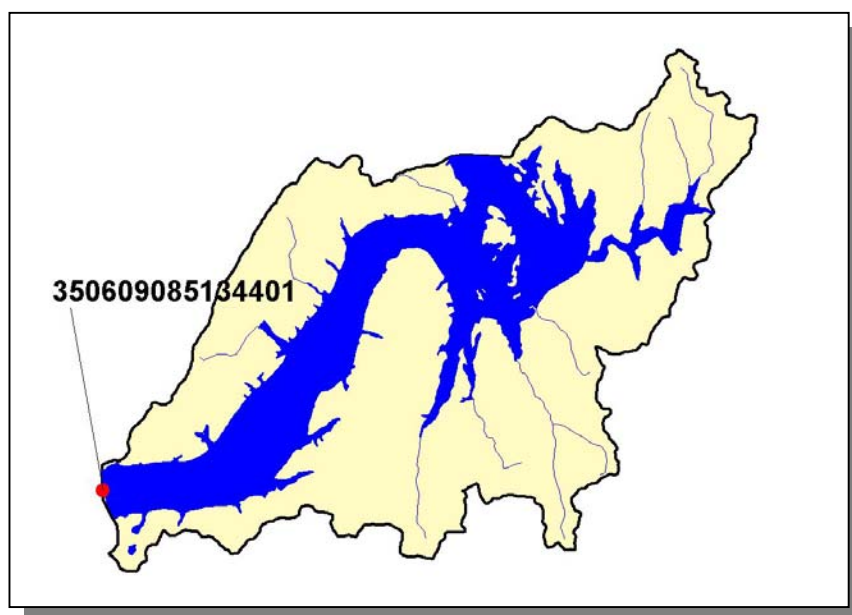
**Table 4-2. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060200010501.** The definition of "Hydrologic Group" is provided in Appendix IV.



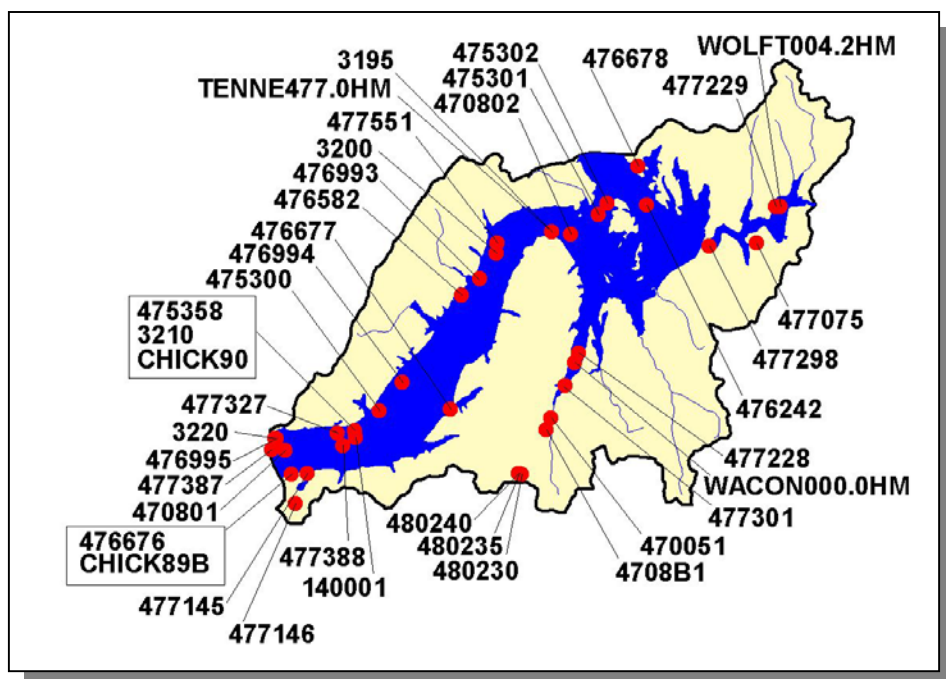
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County	COUNTY POPULATION			Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Hamilton	285,536	294,865	307,896	5.89	16,825	17,375	18,143	7.8

**Table 4-3. Population Estimates in Subwatershed 060200010501.**

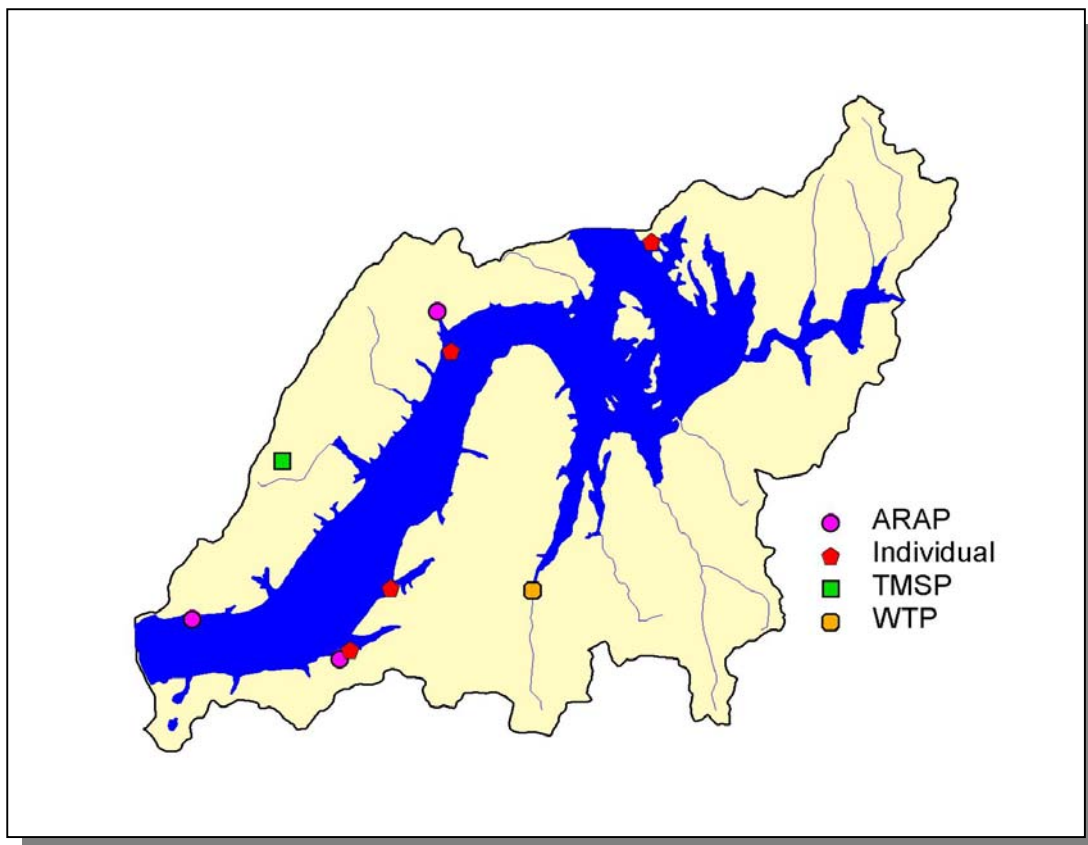


**Figure 4-7. Location of Historical Streamflow Data Collection Sites in Subwatershed 060200010501.** More information is provided in Appendix IV.

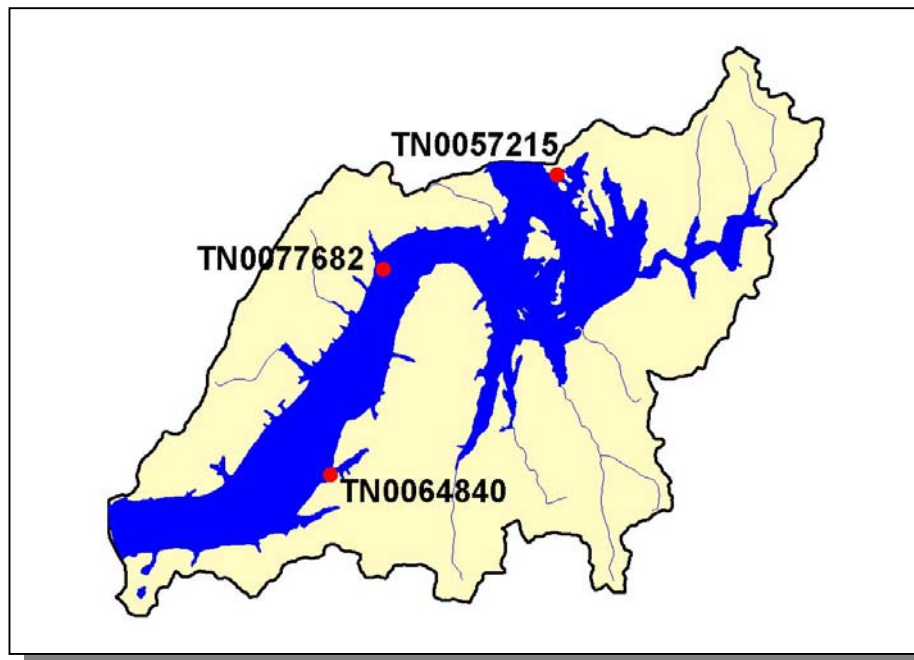


**Figure 4-8. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 060200010501.** More information, including site names and locations, and station numbers for sites located in the watershed outside of Tennessee, is provided in Appendix IV.

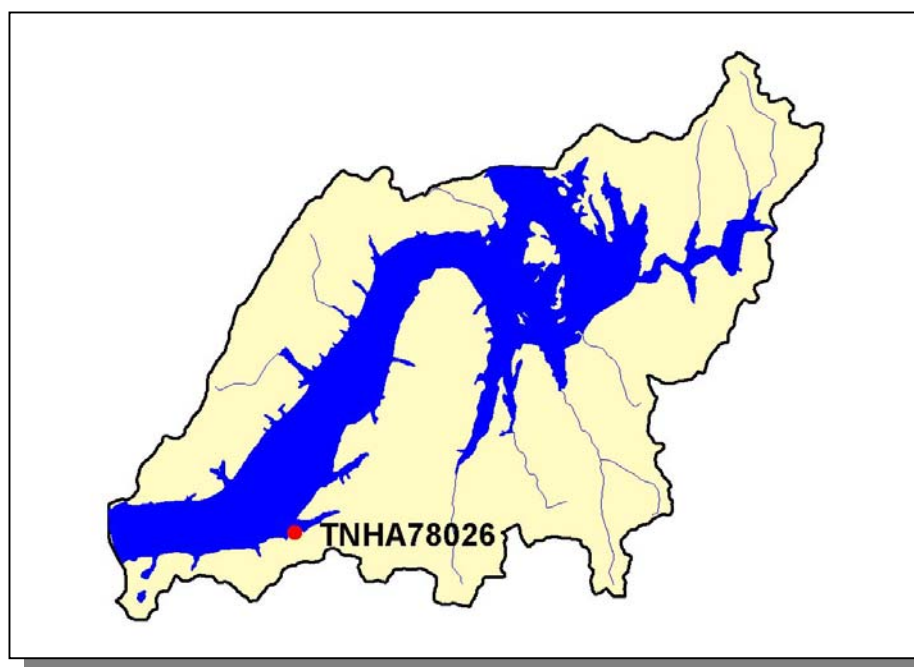
**4.2.A.i.a. Point Source Contributions.**



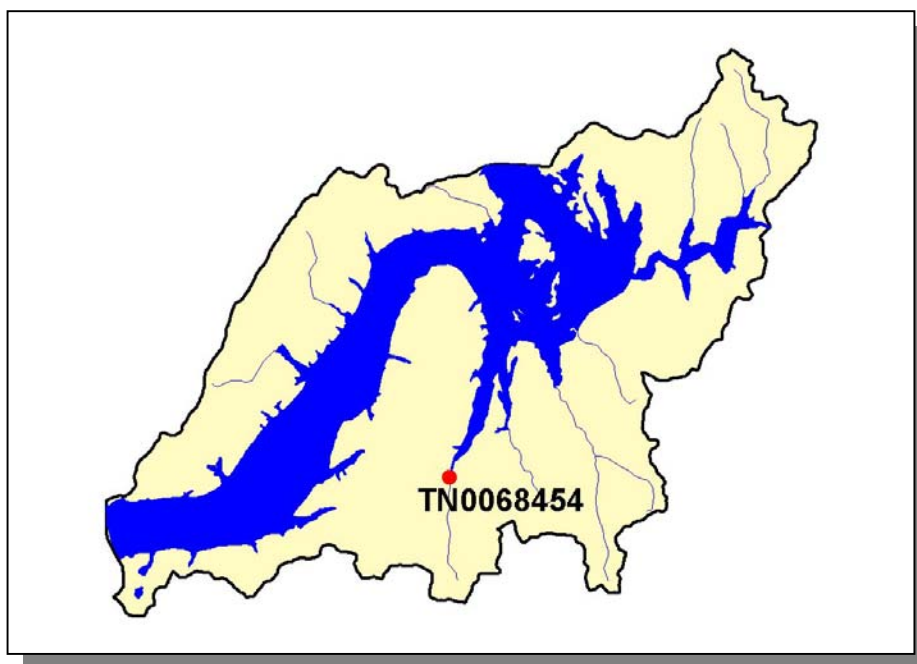
**Figure 4-9. Location of Permits Issued in Subwatershed 060200010501.** More information, including the names of facilities, is provided in Appendix IV.



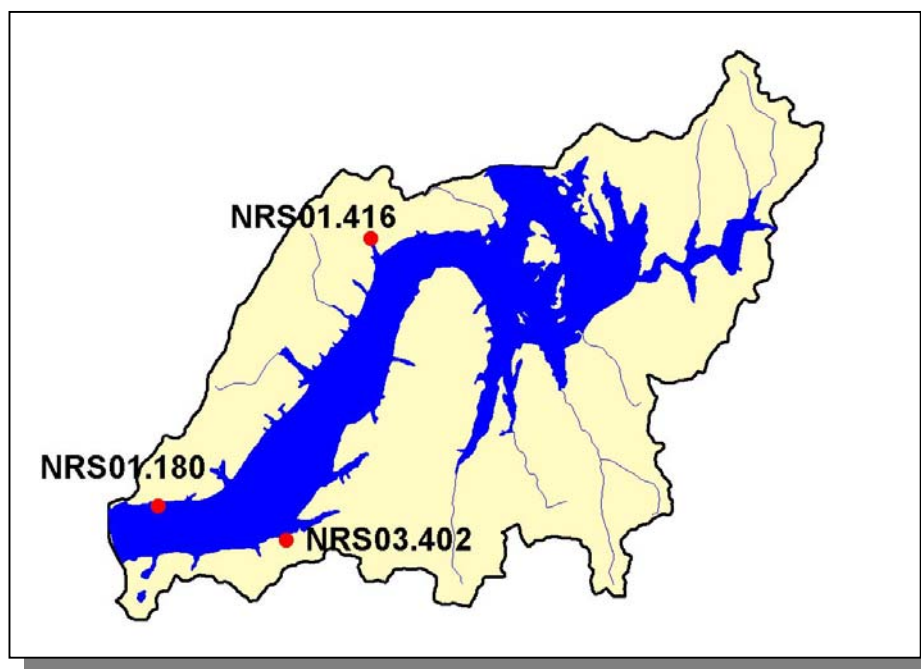
**Figure 4-10. Location of Active NPDES Sites in Subwatershed 060200010501.** More information, including the names of facilities, is provided in Appendix IV.



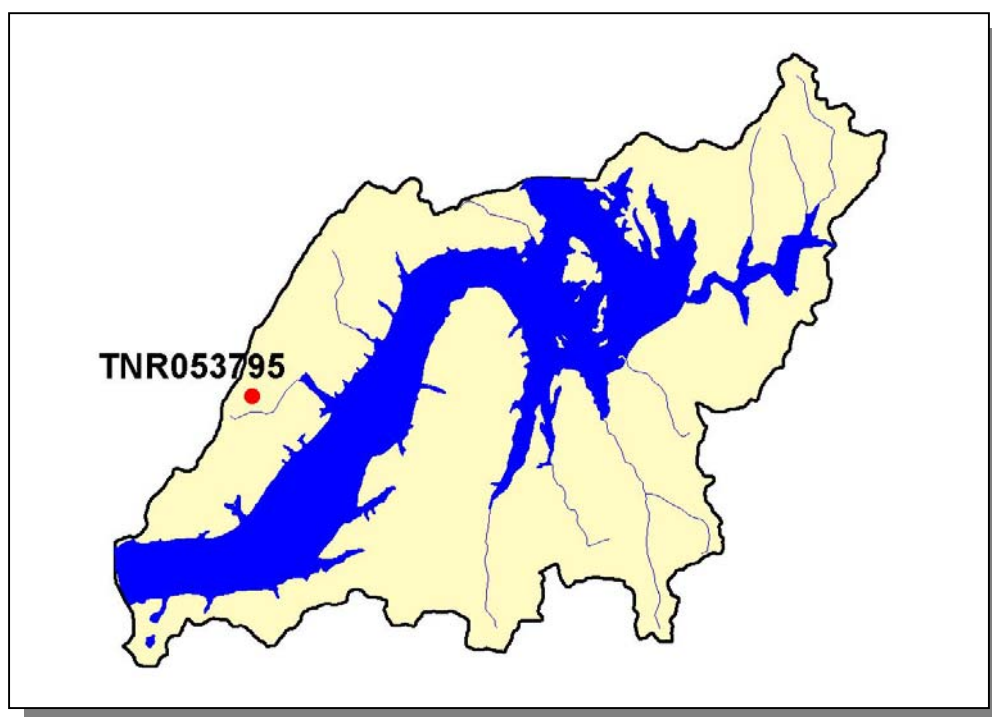
**Figure 4-11. Location of Permitted Herbicide Application Sites in Subwatershed 060200010501.** More information is provided in Appendix IV.



**Figure 4-12. Location of Water Treatment Plants in Subwatershed 060200010501.** More information, including the names of facilities, is provided in Appendix IV.



**Figure 4-13. Location of Aquatic Resource Alteration Permit (ARAP) Sites (Individual Permits) in Subwatershed 060200010501.** More information is provided in Appendix IV.

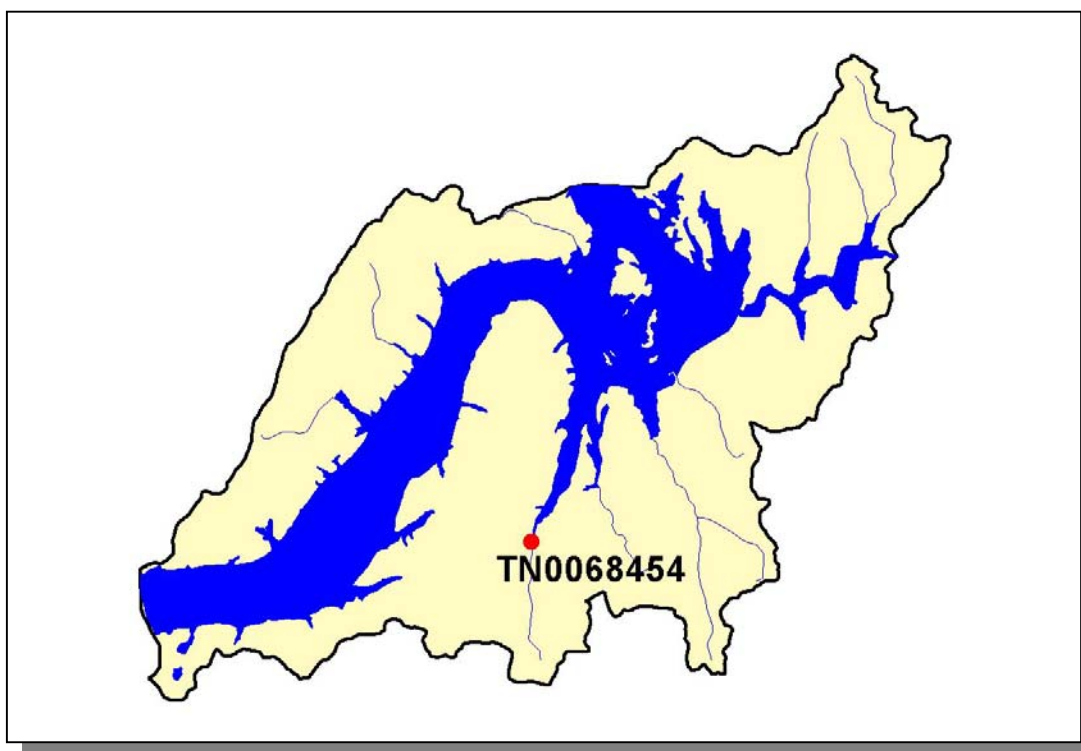


**Figure 4-14. Location of TMSP Sites in Subwatershed 060200010501.** More information, including the names of facilities, is provided in Appendix IV.

**4.2.A.i.a.i. Dischargers to Water Bodies Listed on the 2004 303(d) List**

There is one NPDES facility discharging to water bodies listed on the 2004 303(d) list in Subwatershed 060200010501:

- TN0068454 (Eastside Utility District WTP) discharges to Chickamauga Lake



**Figure 4-15. Location of NPDES Dischargers to Water Bodies Listed on the 2004 303(d) List in Subwatershed 051302060501.** More information, including the names of facilities, is provided in Appendix IV.

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PERMIT #	1Q10	3Q10	7Q10	3Q20	QDESIGN
TN0068454					

**Table 4-4. Receiving Stream Flow Information for NPDES Dischargers to Waterbodies Listed on the 2004 303(d) List in Subwatershed 060200010501.** Data are in million gallons per day (MGD). Data were obtained from the USGS publication Flow Duration and Low Flows of Tennessee Streams Through 1992 or from permit files.

PERMIT #	FLOW	AI
TN0068454	X	X

**Table 4-5. Monitoring Requirements for NPDES Dischargers to Waterbodies Listed on the 2004 303(d) List in Subwatershed 060200010501.**

PERMIT #	TRC	TSS	SETTLEABLE SOLIDS	pH
TN0068454	X	X	X	X

**Table 4-6. Parameters Monitored for Daily Maximum Limits for NPDES Dischargers to Waterbodies Listed on the 2004 303(d) List in Subwatershed.** TRC, Total Residual Chlorine; TSS, Total Suspended Solids.



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**4.2.A.i.b. Nonpoint Source Contributions.**

LIVESTOCK COUNTS					
Beef Cow	Cattle	Milk Cow	Chickens (Broilers Sold)	Hogs	Sheep
114	242	13	15,351	17	<5

**Table 4-7. Summary of Livestock Count Estimates in Subwatershed 060200010501.** According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.

LIVESTOCK COUNTS							
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Chickens (Broilers Sold)	Hogs	Sheep
Hamilton	6,913	14,734	801	30	934,564	1,017	109

**Table 4-8. Summary of Livestock Count Estimates in Hamilton County.** According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.

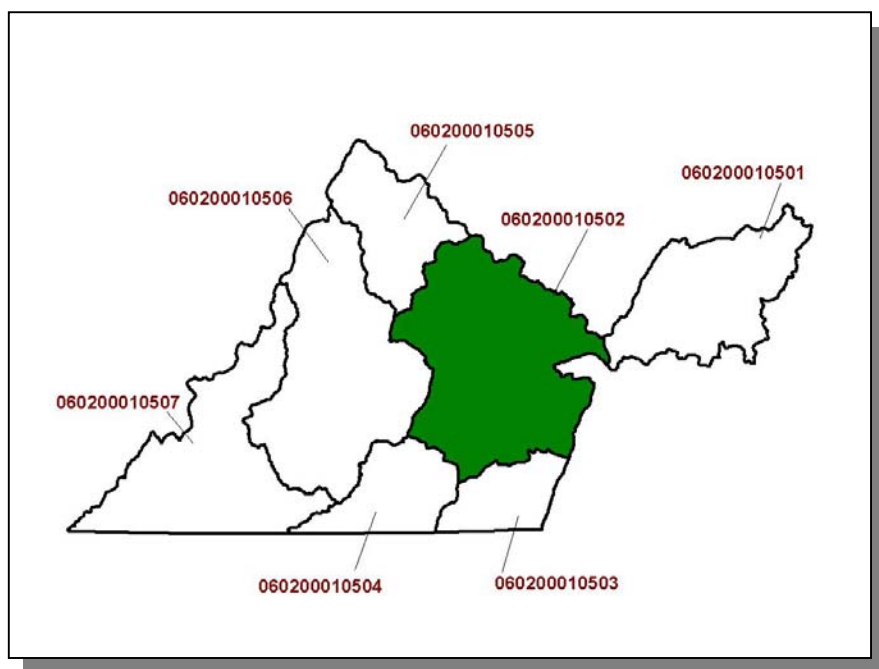
County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Hamilton	210.7	210.7	2.2	6.0

**Table 4-9. Forest Acreage and Annual Removal Rates (1987-1994) in Hamilton County.**

CROPS	TONS/ACRE/YEAR
Grass (Pastureland)	0.34
Grass (Hayland)	2.33
Legumes, Grass (Hayland)	0.20
Legumes (Pastureland)	0.07
Grass, Forbs, Legumes (Mixed Pasture)	0.27
Corn (Row Crops)	5.28
Oats (Close-Grown Cropland)	3.13
Wheat (Close-Grown Cropland)	3.14
All Other Close-Grown Cropland	1.99
Farmsteads and Ranch Headquarters	0.10

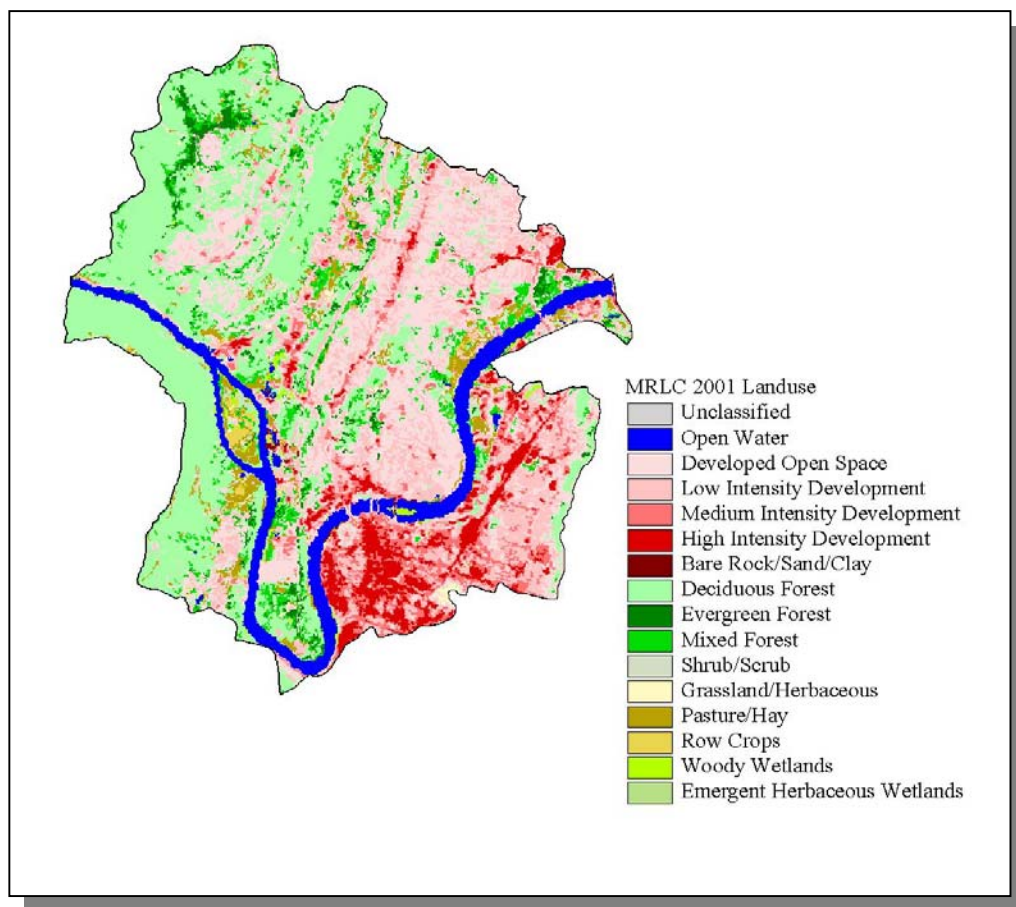
**Table 4-10. Annual Estimated Total Soil Loss in Subwatershed 060200010501.**

**4.2.A.ii. 060200010502 (Tennessee River).**



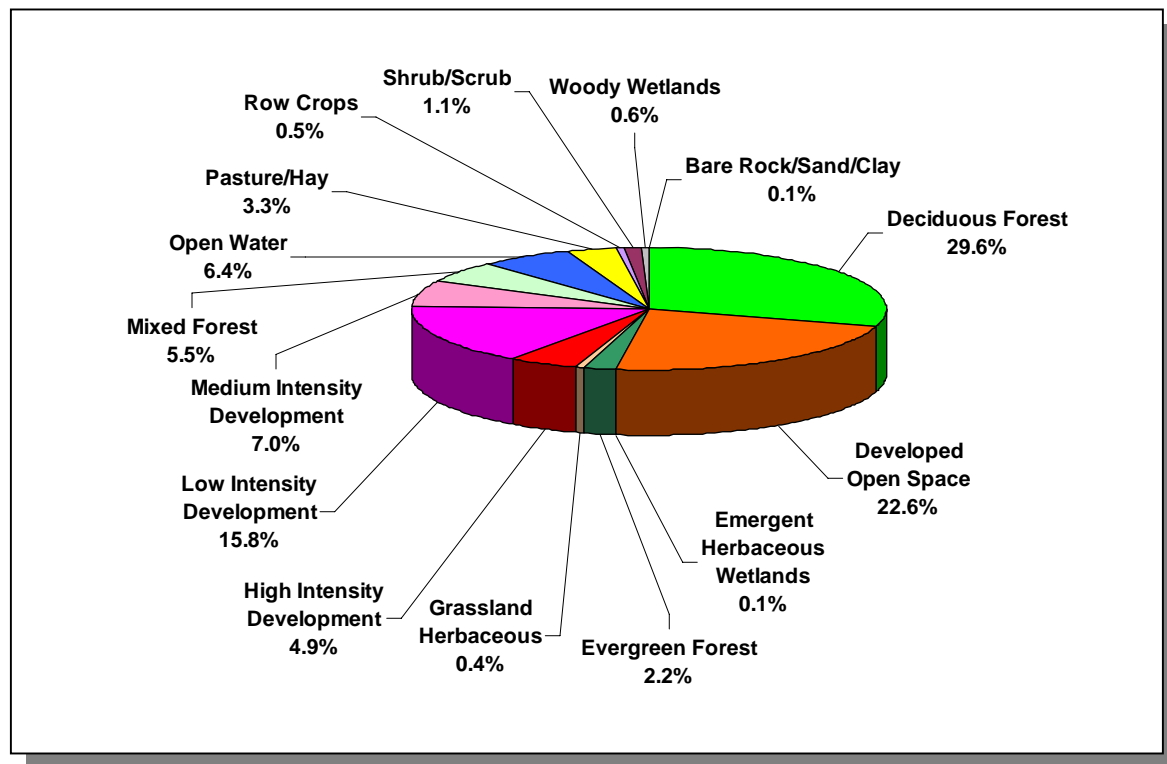
**Figure 4-16. Location of Subwatershed 060200010502.** All Group 4 Lower Tennessee River HUC-12 subwatershed boundaries in Tennessee are shown for reference.

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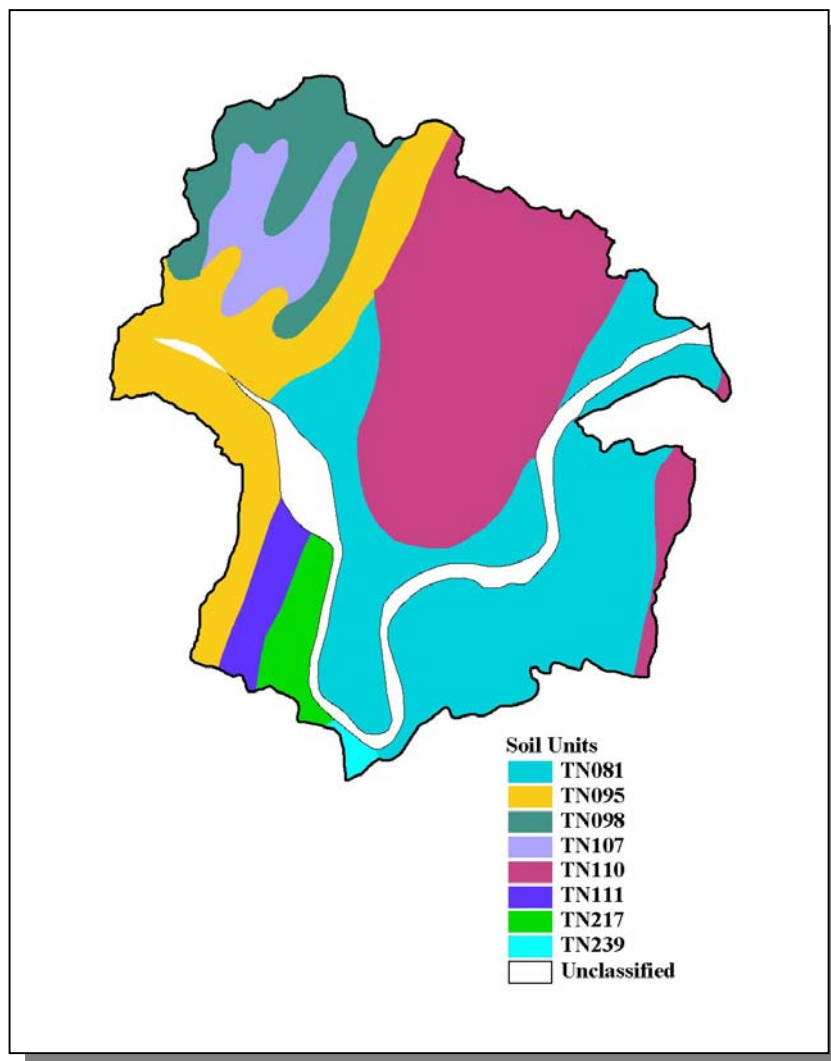
**Figure 4-17. Illustration of Land Use Distribution in Subwatershed 060200010502.**

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**Figure 4-18. Land Use Distribution in Subwatershed 060200010502.** More information is provided in Appendix IV.

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**Figure 4-19. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060200010502.**

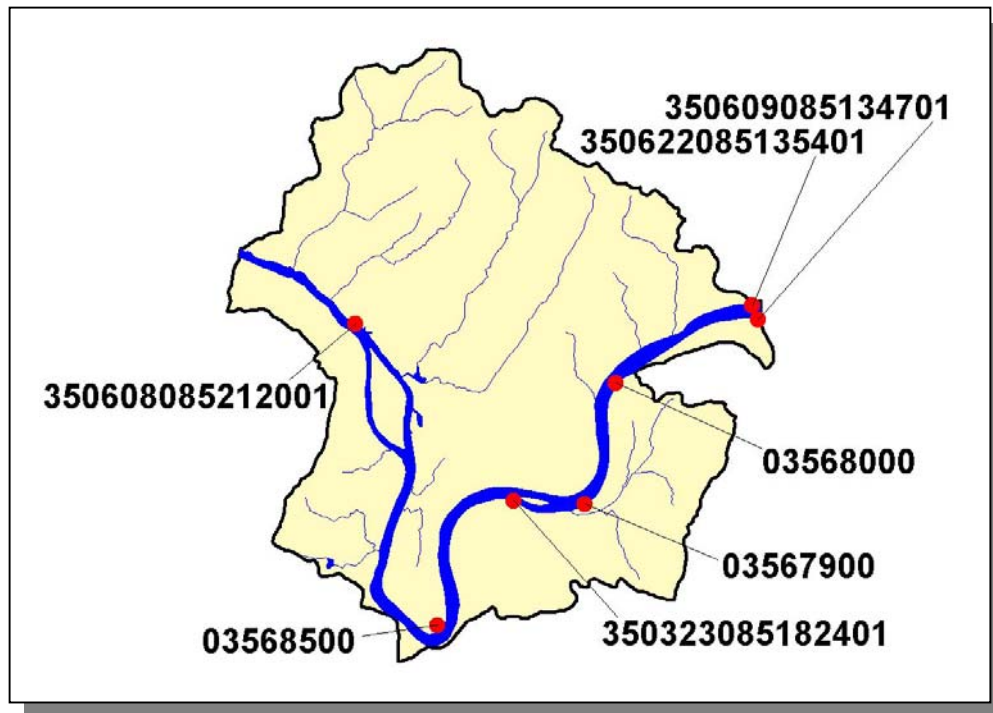
STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN081	5.00	C	1.41	5.48	Silty Loam	0.35
TN095	0.00	B	2.35	5.12	Loam	0.31
TN098	1.00	C	3.98	4.82	Loam	0.32
TN107	1.00	C	6.34	4.84	Loam	0.28
TN110	0.00	B	2.22	4.96	Loam	0.31
TN111	0.00	C	1.41	5.10	Loam	0.34
TN217	0.00	C	2.34	5.32	Loam	0.35
TN239	2.00	C	2.94	4.86	Loam	0.22

**Table 4-11. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060200010502.** The definition of "Hydrologic Group" is provided in Appendix IV.

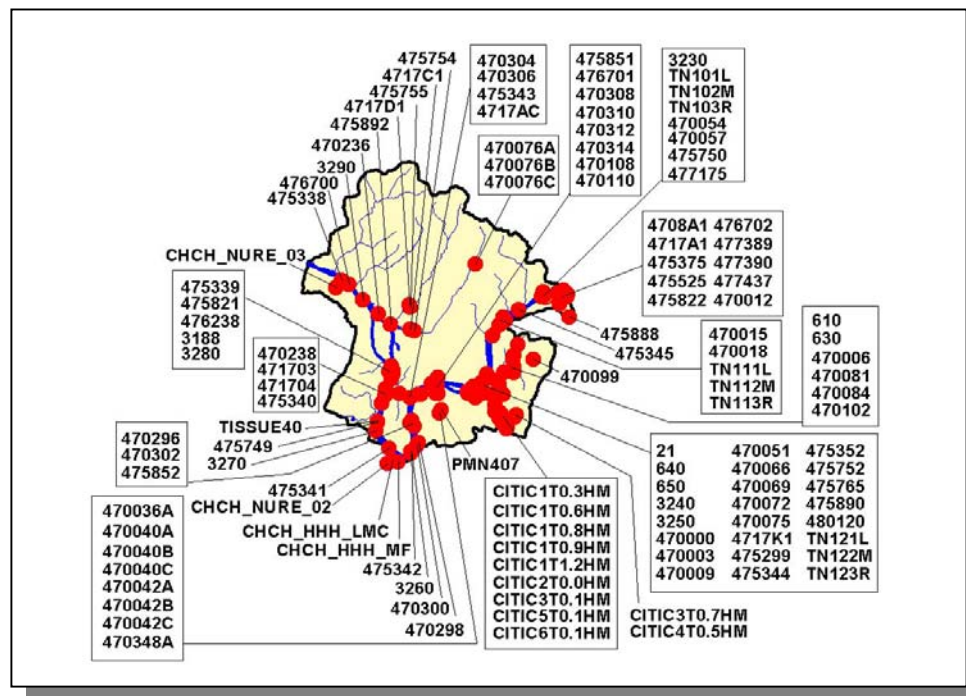
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County	COUNTY POPULATION			Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Hamilton	285,536	294,865	307,896	10.38	29,639	30,607	31,960	7.8
Marion	24,860	26,674	27,776	0.2	29	53	55	12.2
<b>Total</b>	<b>310,396</b>	<b>321,539</b>	<b>335,672</b>		<b>29,688</b>	<b>30,660</b>	<b>32,015</b>	<b>7.8</b>

*Table 4-12. Population Estimates in Subwatershed 060200010502.*

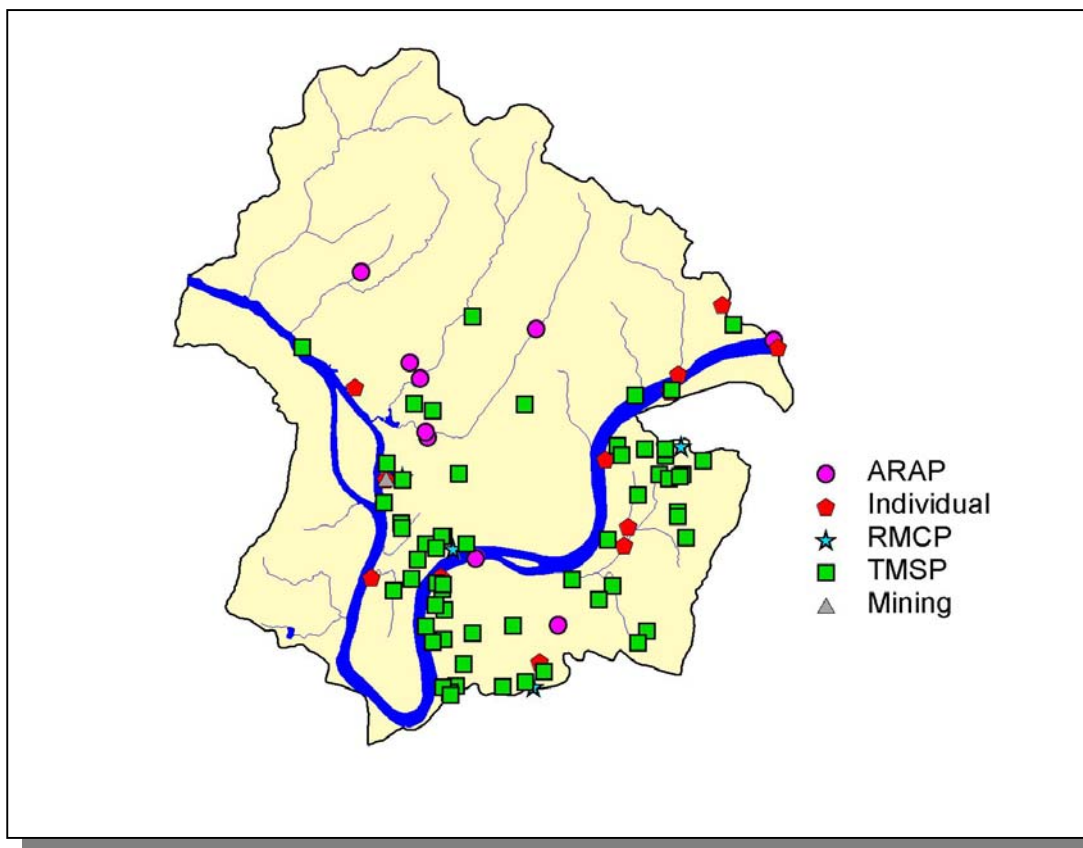


**Figure 4-20. Location of Historical Streamflow Data Collection Sites in Subwatershed 060200010502.** More information is provided in Appendix IV.



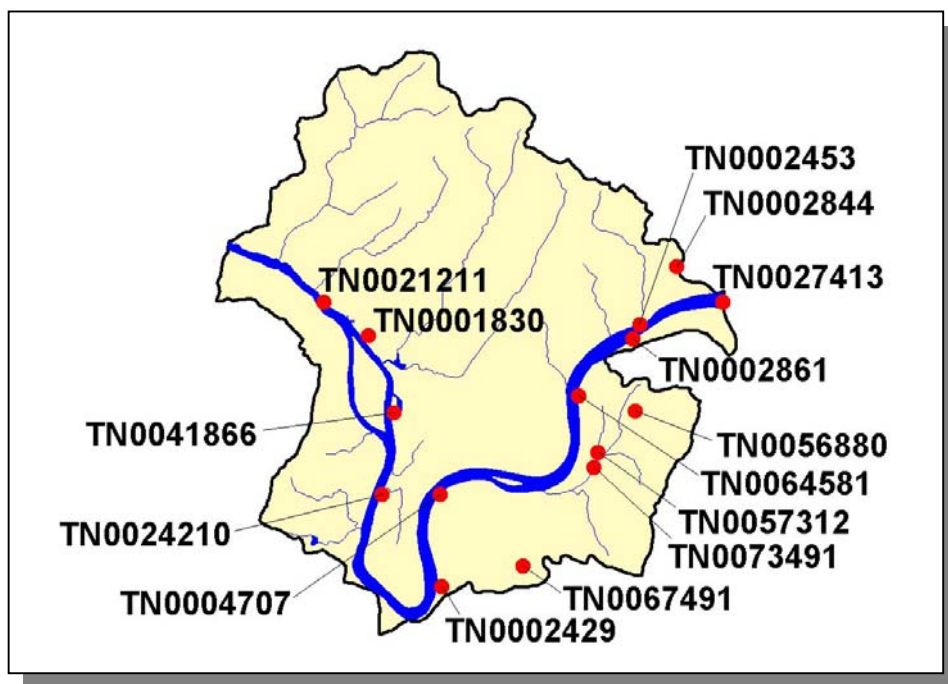
**Figure 4-21. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 060200010502.** More information, including site names and locations, and station numbers for sites located in the watershed outside of Tennessee, is provided in Appendix IV.

**4.2.A.ii.a. Point Source Contributions.**

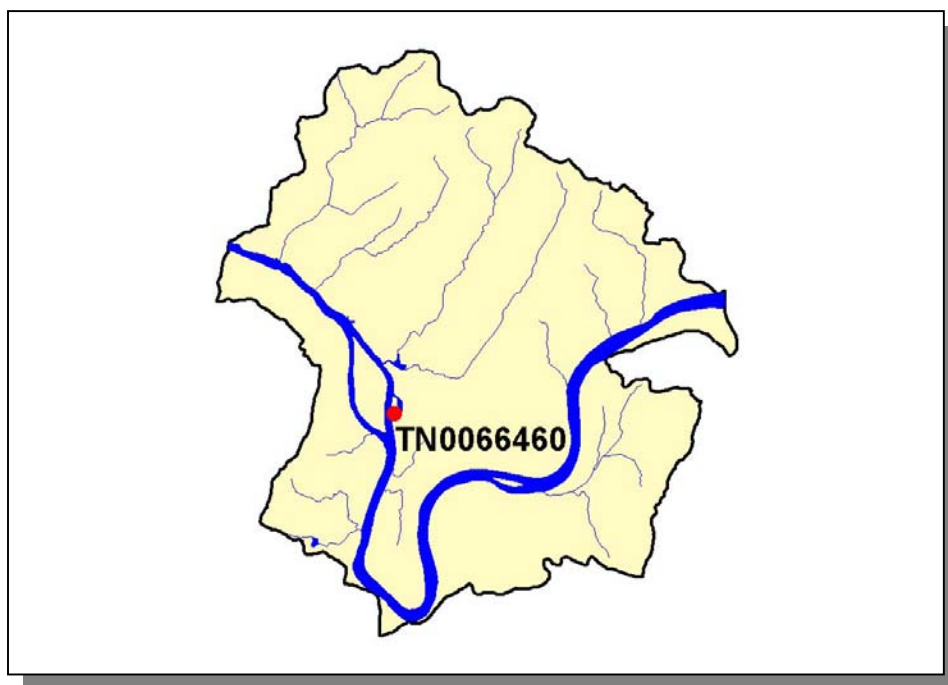


**Figure 4-22. Location of Permits Issued in Subwatershed 060200010502.** More information, including the names of facilities, is provided in Appendix IV.



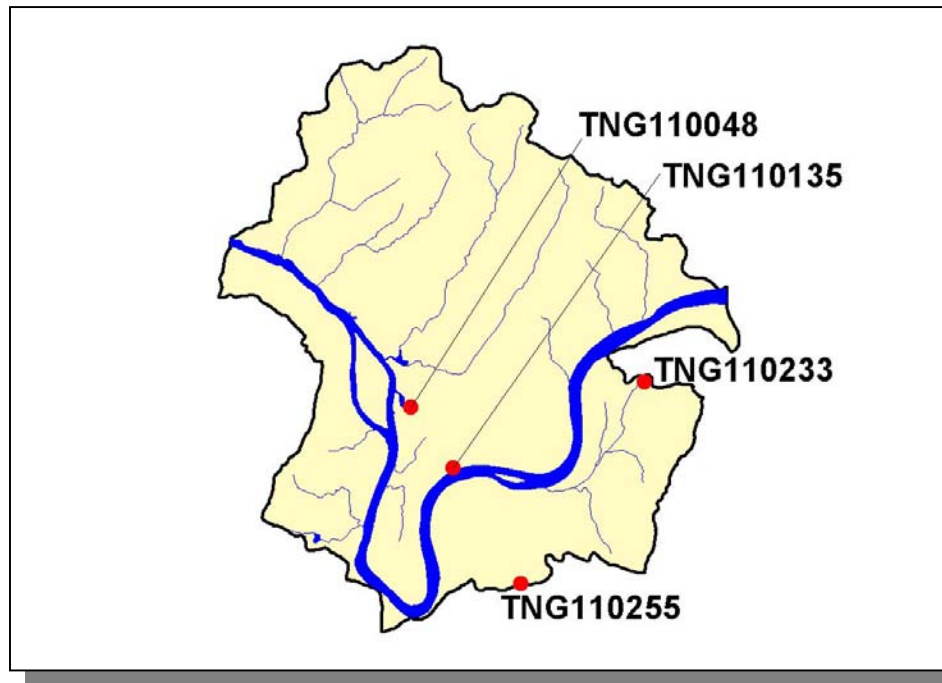


**Figure 4-23. Location of Active NPDES Sites in Subwatershed 060200010502.** More information, including the names of facilities, is provided in Appendix IV.

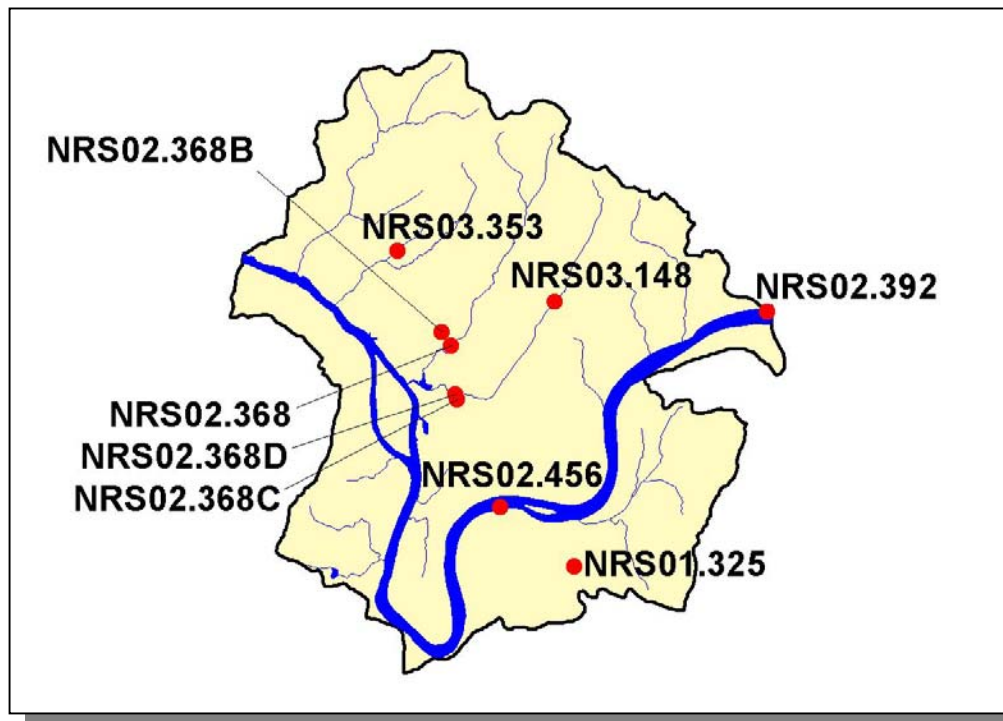


**Figure 4-24. Location of Active Mining Sites in Subwatershed 060200010502.** More information, including the names of mining operations, is provided in Appendix IV.

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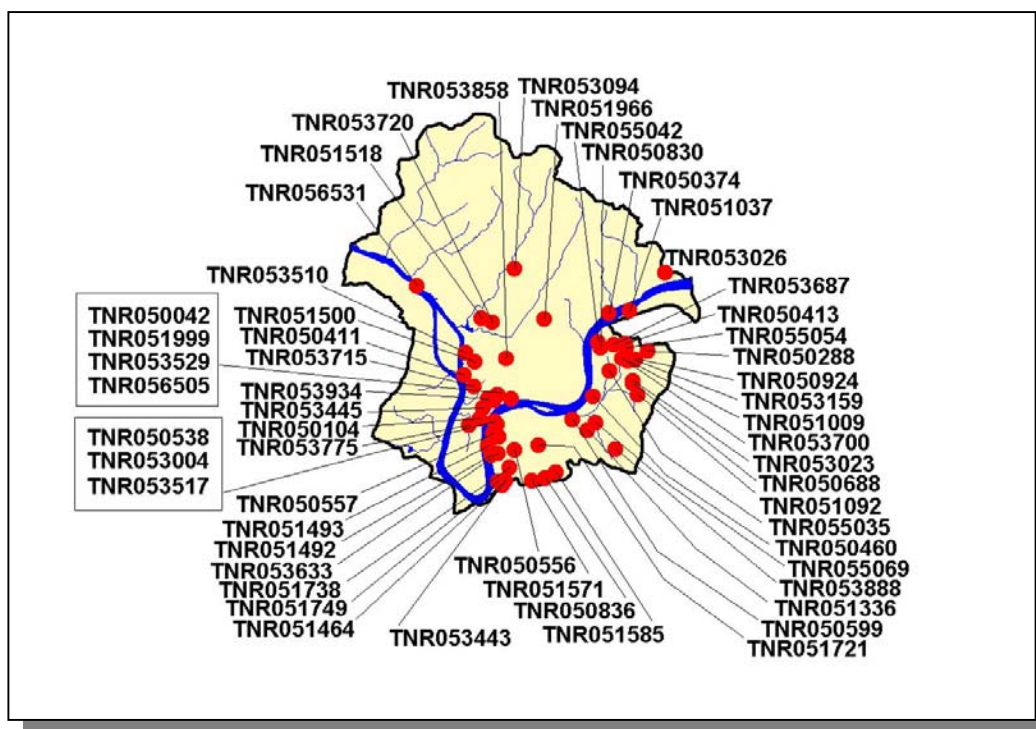


**Figure 4-25. Location of Ready Mix Concrete Plants (RMCP) in Subwatershed 060200010502.** More information is provided in Appendix IV.



**Figure 4-26. Location of Aquatic Resource Alteration Permit (ARAP) Sites (Individual Permits) in Subwatershed 060200010502.** More information is provided in Appendix IV.

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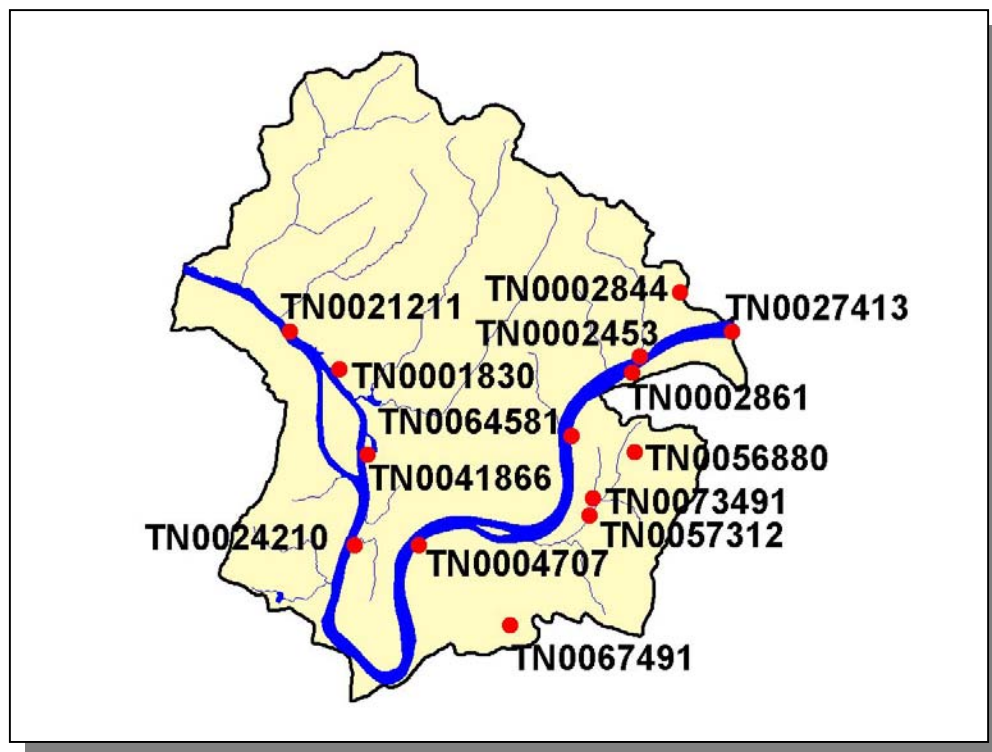
**Figure 4-27. Location of TMSP Sites in Subwatershed 060200010502.** More information, including the names of facilities, is provided in Appendix IV.

**4.2.A.ii.a.i.** Dischargers to Water Bodies Listed on the 2004 303(d) List

There are fourteen NPDES facilities discharging to water bodies listed on the 2004 303(d) list in Subwatershed 060200010502:

- TN0001830 (Signal Mountain Cement Company) discharges to the Tennessee River @ RM 454.5
- TN0002453 (R.L. Stowe Mills) discharges to the Tennessee River @ RM 469.3
- TN0002844 (Artiva Specialties) discharges to the Tennessee River @ RM 469.9, a wetland, a wet weather conveyance to the Tennessee River @ RM 469.7, and to an unnamed tributary to North Chickamauga Creek
- TN0002861 (BASF Corporation) discharges to the Tennessee River @ RM 469
- TN0021211 (Hamilton County Waste Water Treatment Plant) discharges to the Tennessee River @ RM 453.7
- TN0024210 (Chattanooga Moccasin Bend Waste Water Treatment Plant) discharges to the Tennessee River @ RM 457.8
- TN0027413 (TVA-Chickamauga Hydro Plant) discharges to the Tennessee River @ RM 471
- TN0041866 (Ergon Terminating, Inc.) discharges to the Tennessee River @ RM 456.4 and @ 456.0
- TN0004707 (Vulcan Construction Materials) discharges to the Tennessee River @ RM 463.2
- TN0056880 (Parman Lubricants) discharges to Citico Creek @ RM 1.9
- TN0057312 (Chattanooga Gas Company Liquified Natural Gas) discharges to a wet weather conveyance to Citico Creek @ RM 3.2
- TN0064581 (NA Industries, Inc.) discharges to the Tennessee River @ RM 467.2
- TN0067491 (Top Flight, Incorporated) discharges to Dobbs Branch @ RM 0.3
- TN0073491 (Norfolk Southern Railway) discharges to Citico Creek and to an unnamed tributary to Citico Creek

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**Figure 4-28. Location of NPDES Dischargers to Water Bodies Listed on the 2004 303(d) List in Subwatershed 051302060502.** More information, including the names of facilities, is provided in Appendix IV.

PERMIT #	1Q10	3Q10	7Q10	3Q20	QDESIGN
TN0001830					
TN0002453					
TN0002844					
TN0002861					
TN0004707					
TN0021211	3,018				
TN0024210					
TN0027413					
TN0041866					
TN0056880					
TN0057312					
TN0064581					
TN0067491					
TN0073491					

**Table 4-13. Receiving Stream Flow Information for NPDES Dischargers to Waterbodies Listed on the 2004 303(d) List in Subwatershed 060200010502.** Data are in million gallons per day (MGD). Data were obtained from the USGS publication *Flow Duration and Low Flows of Tennessee Streams Through 1992* or from permit files.

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PERMIT #	P	FLOW	TEMPERATURE	NO <sub>3</sub> +NO <sub>2</sub>	N
TN0001830		X			
TN0002453		X	X		
TN0002844		X	X		
TN0002861		X	X		
TN0004707		X			
TN0024210	X	X		X	X
TN0027413		X			
TN0041866		X			
TN0064581		X	X		
TN0067491		X			
TN0073491		X			

**Table 4-14. Monitoring Requirements for NPDES Dischargers to Waterbodies Listed on the 2004 303(d) List in Subwatershed 060200010502.**

PERMIT #	Zn	Cu	Pb	Cd	Hg	As	Se	V
TN0002453	X	X						
TN0002844	X	X	X	X	X	X	X	X

**Table 4-15. Inorganic Monitoring Requirements for NPDES Dischargers to Waterbodies Listed on the 2004 303(d) List in Subwatershed 060200010502.**

PERMIT #	TRICHLOROETHYLENE	TETRACHLOROETHYLENE	STYRENE
TN0002844	X	X	
TN0041866			X

**Table 4-16. Organic Monitoring Requirements for NPDES Dischargers to Waterbodies Listed on the 2004 303(d) List in Subwatershed 060200010502.**

PERMIT #	COMBINED RELEASES	RAINFALL EVENTS
TN0024210	X	X

**Table 4-17. Additional Monitoring Requirements for NPDES Dischargers to Waterbodies Listed on the 2004 303(d) List in Subwatershed 060200010502.**



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PERMIT #	WET	COD	CBOD <sub>5</sub>	NH <sub>3</sub>	N	TRC	TSS	SETTLEABLE SOLIDS	DO	pH
TN0001830							X			X
TN0002453			X	X			X			X
TN0002844		X	X		X		X			
TN0002861		X								X
TN0021211			X			X	X	X	X	X
TN0024210	X		X	X		X	X	X	X	X
TN0027413							X			
TN0041866							X	X		X
TN0056880							X			X
TN0057312	X						X			X
TN0064581										X
TN0067491										X
TN0073491		X					X			X

**Table 4-18. Parameters Monitored for Daily Maximum Limits for NPDES Dischargers to Waterbodies Listed on the 2004 303(d) List in Subwatershed 060200010502.** wet, Whole Effluent Toxicity; COD, Chemical Oxygen Demand; CBOD<sub>5</sub>, Carbonaceous Biochemical Oxygen Demand (5-Day); TRC, Total Residual Chlorine; TSS, Total Suspended Solids.

PERMIT #	E. coli	FECAL COLIFORM
TN0021211	X	X
TN0024210	X	X

**Table 4-19. Bacteria Monitored for Daily Maximum Limits for NPDES Dischargers to Waterbodies Listed on the 2004 303(d) List in Subwatershed 060200010502.**

PERMIT #	OIL and GREASE	PCB	BENZENE	ETHYLBENZENE	TOLUENE	XYLENE
TN0002453	X					
TN0002844	X					
TN0024210	X					
TN0027413		X				
TN0041866	X		X	X	X	X
TN0057312	X					
TN0067491	X					
TN0073491	X					

**Table 4-20. Organic Parameters Monitored for Daily Maximum Limits for NPDES Dischargers to Waterbodies Listed on the 2004 303(d) List in Subwatershed 060200010502.** PCB, Polychlorinated Biphenyls.

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**4.2.A.ii.b. Nonpoint Source Contributions.**

<b>LIVESTOCK (COUNTS)</b>						
Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Chickens (Broilers Sold)	Hogs	Sheep
258	549	30	<5	34,818	38	<5

**Table 4-21. Summary of Livestock Count Estimates in Subwatershed 060200010502.**  
According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.

<b>LIVESTOCK COUNTS</b>							
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Chickens (Broilers Sold)	Hogs	Sheep
Hamilton	6,913	14,734	801	30	934,564	1,017	109
Marion	4,424	8,939	311	246	3,782,097	279	0

**Table 4-22. Summary of Livestock Count Estimates in Hamilton and Marion Counties.**  
According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.

County	<b>INVENTORY</b>		<b>REMOVAL RATE</b>	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Hamilton	210.7	210.7	2.2	6.0
Marion				

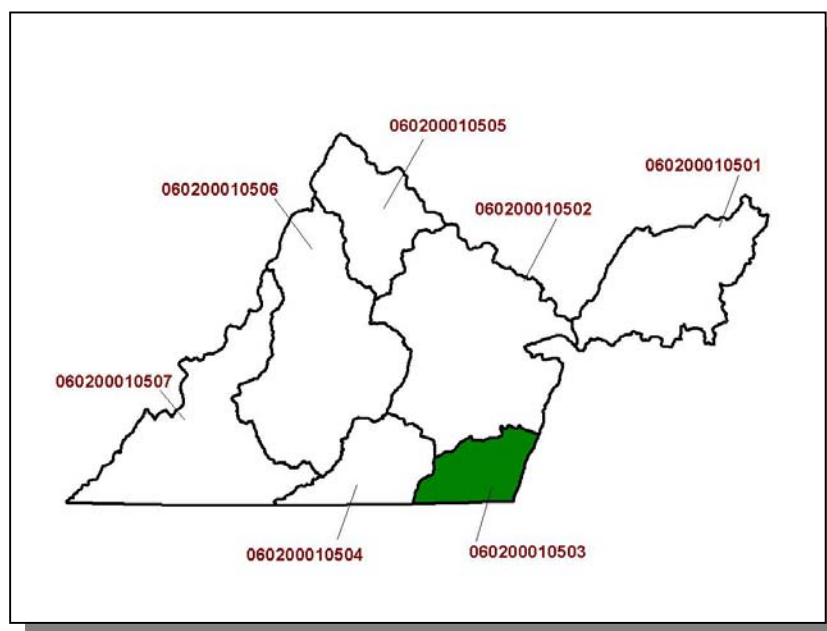
**Table 4-23. Forest Acreage and Annual Removal Rates (1987-1994) in Hamilton and Marion Counties.**

<b>CROPS</b>	<b>TONS/ACRE/YEAR</b>
Grass (Pastureland)	0.34
Grass (Hayland)	2.33
Legumes, Grass (Hayland)	0.20
Legumes (Pastureland)	0.07
Grass, Forbs, Legumes (Mixed Pasture)	0.27
Corn (Row Crops)	5.25
Soybeans (Row Crops)	4.56
Oats (Close-Grown Cropland)	3.13
Wheat (Close-Grown Cropland)	3.14
All Other Close-Grown Cropland	1.99
Other (Horticultural)	0.29
Other Vegetable and Truck Crops	7.28
Farmsteads and Ranch Headquarters	0.10

**Table 4-24. Annual Estimated Total Soil Loss in Subwatershed 060200010502.**

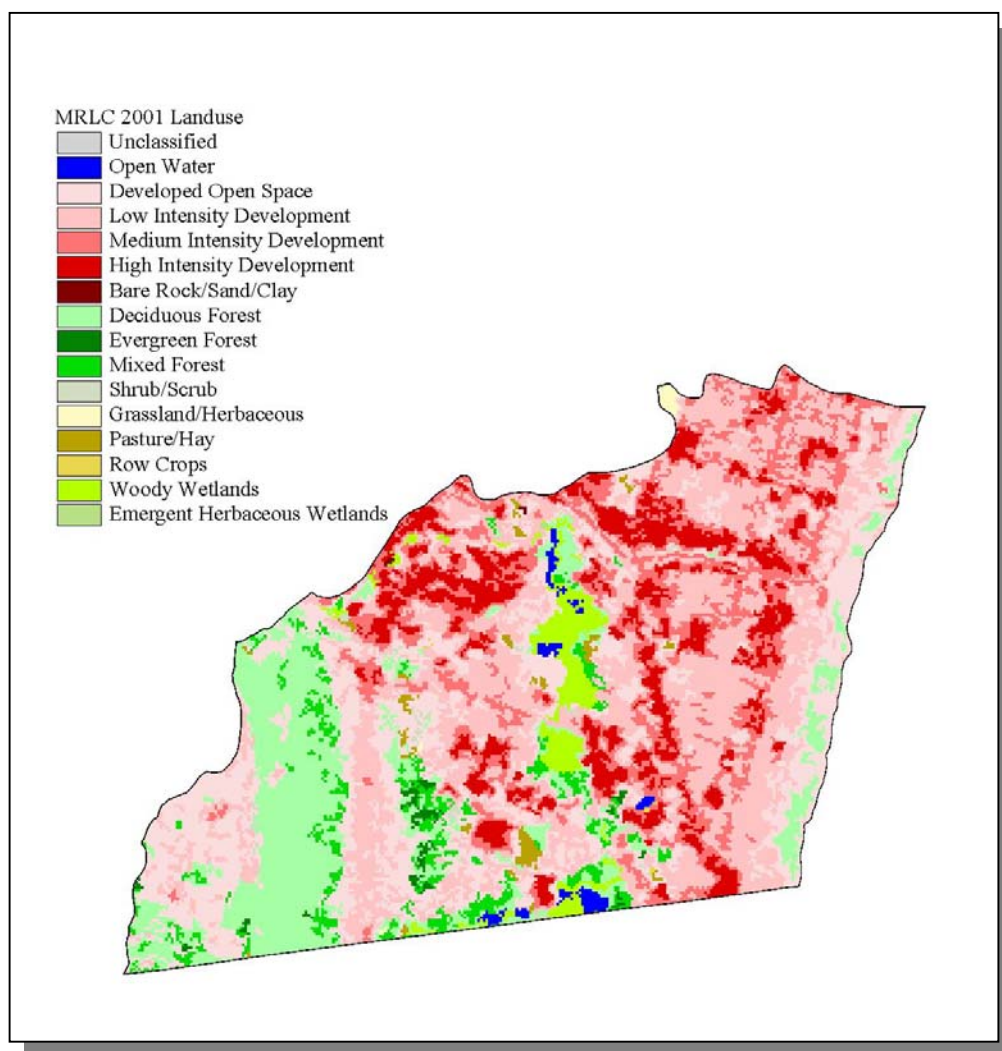


**4.2.A.iii. 060200010503 (Chattanooga Creek).**



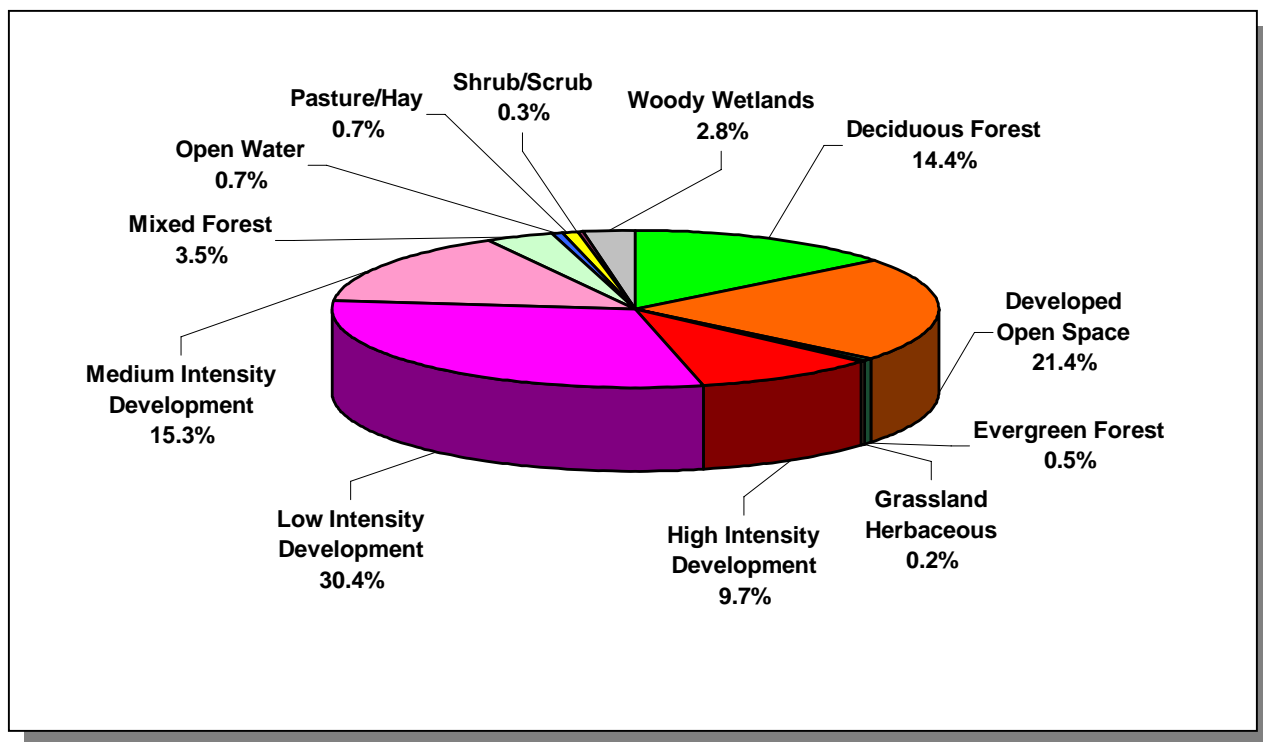
**Figure 4-29. Location of Subwatershed 060200010503.** All Group 4 Lower Tennessee River HUC-12 subwatershed boundaries in Tennessee are shown for reference.

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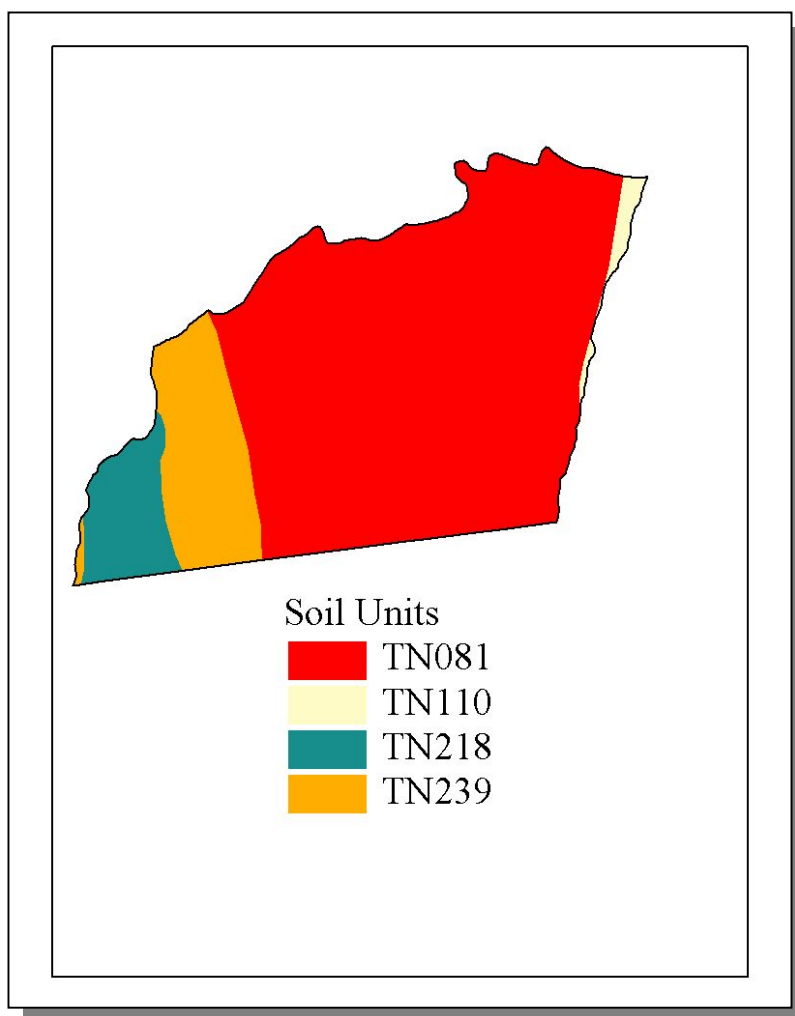
**Figure 4-30. Illustration of Land Use Distribution in Subwatershed 060200010503.**

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**Figure 4-31. Land Use Distribution in Subwatershed 060200010503.** More information is provided in Appendix IV.

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**Figure 4-32. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060200010503.**

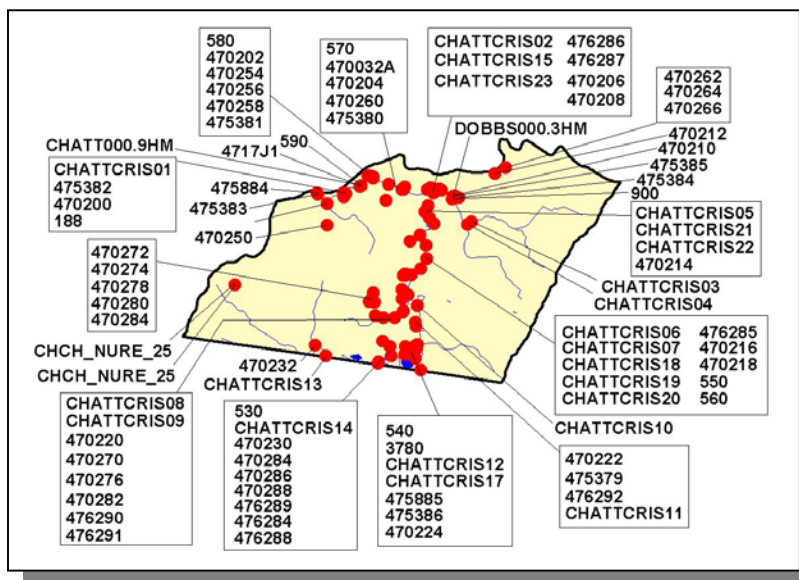
STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN081	5.00	C	1.41	5.48	Silty Loam	0.35
TN110	0.00	B	2.22	4.96	Loam	0.31
TN218	0.00	C	3.41	4.95	Sandy Loam	0.23
TN239	2.00	C	2.94	4.86	Loam	0.22

**Table 4-25. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060200010503.** The definition of "Hydrologic Group" is provided in Appendix IV.

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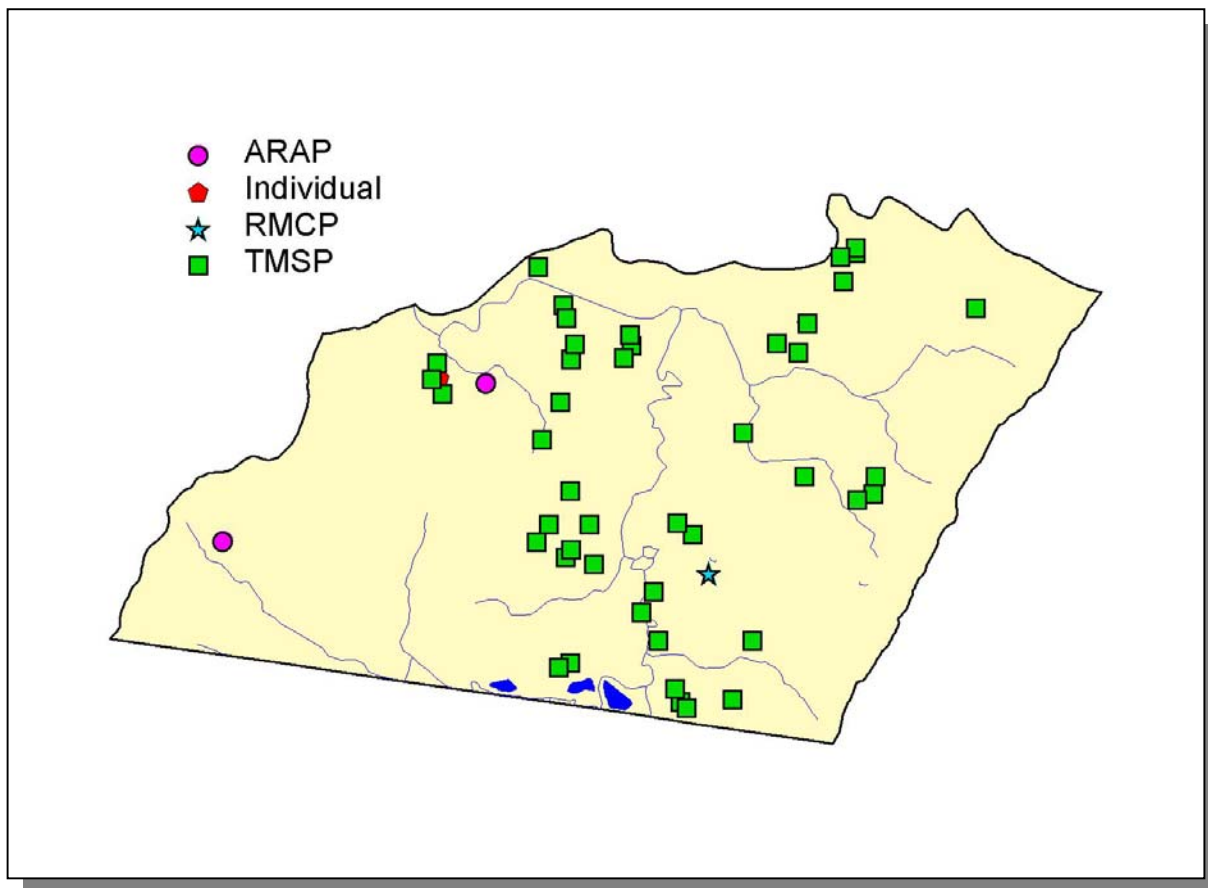
County	COUNTY POPULATION			Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Hamilton	285,536	294,865	307,896	1.98	5,645	5,830	6,087	7.8

**Table 4-26. Population Estimates in Subwatershed 060200010503.**

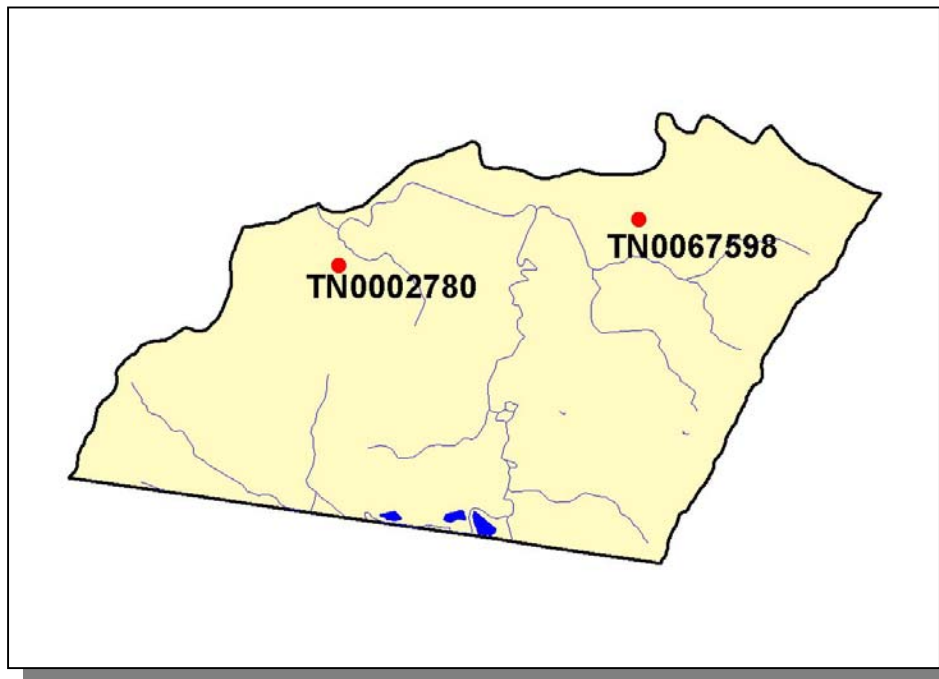


**Figure 4-33. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 060200010503.** More information, including site names and locations, and station numbers for sites located in the watershed outside of Tennessee, is provided in Appendix IV.

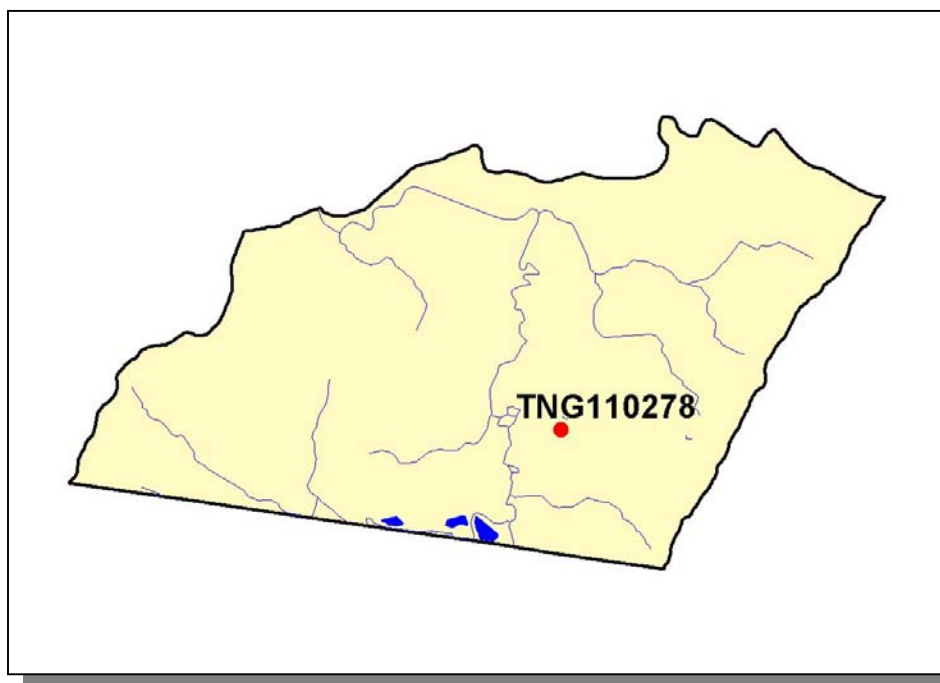
**4.2.A.iii.a. Point Source Contributions.**



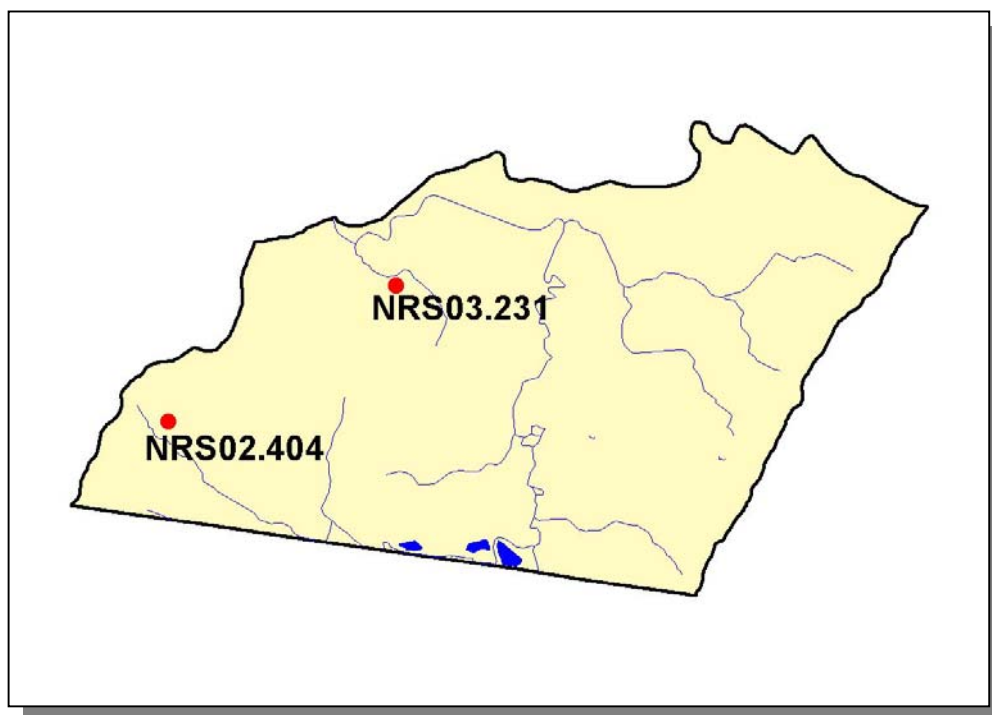
**Figure 4-34. Location of Permits Issued in Subwatershed 060200010503.** More information, including the names of facilities, is provided in Appendix IV.



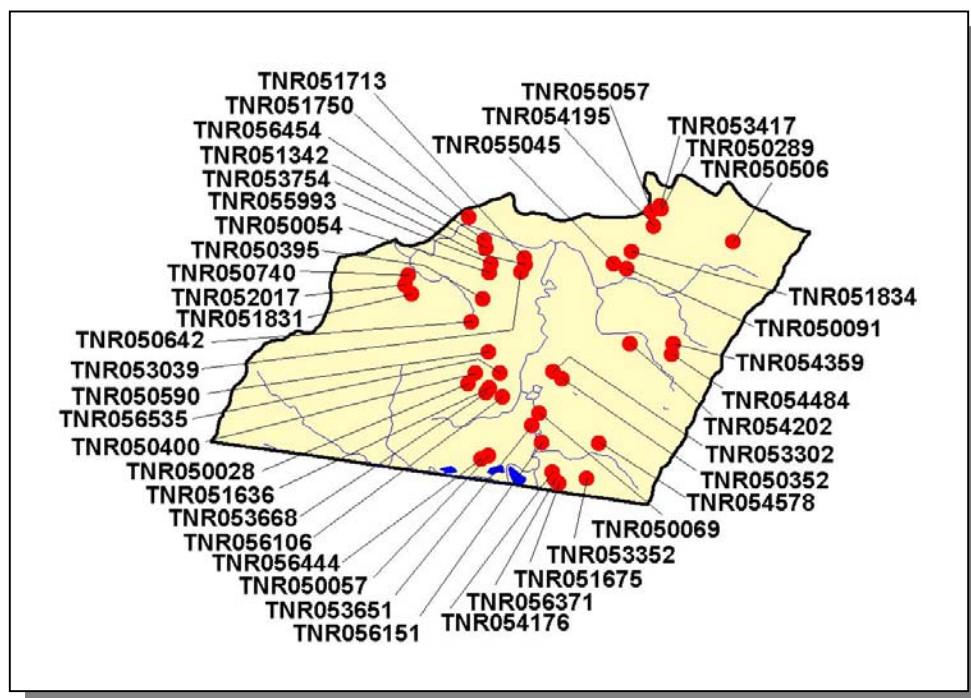
**Figure 4-35. Location of Active NPDES Sites in Subwatershed 060200010503.** More information, including the names of facilities, is provided in Appendix IV.



**Figure 4-36. Location of Ready Mix Concrete Plants (RMCP) in Subwatershed 060200010503.** More information is provided in Appendix IV.



**Figure 4-37. Location of Aquatic Resource Alteration Permit (ARAP) Sites (Individual Permits) in Subwatershed 060200010503.** More information is provided in Appendix IV.



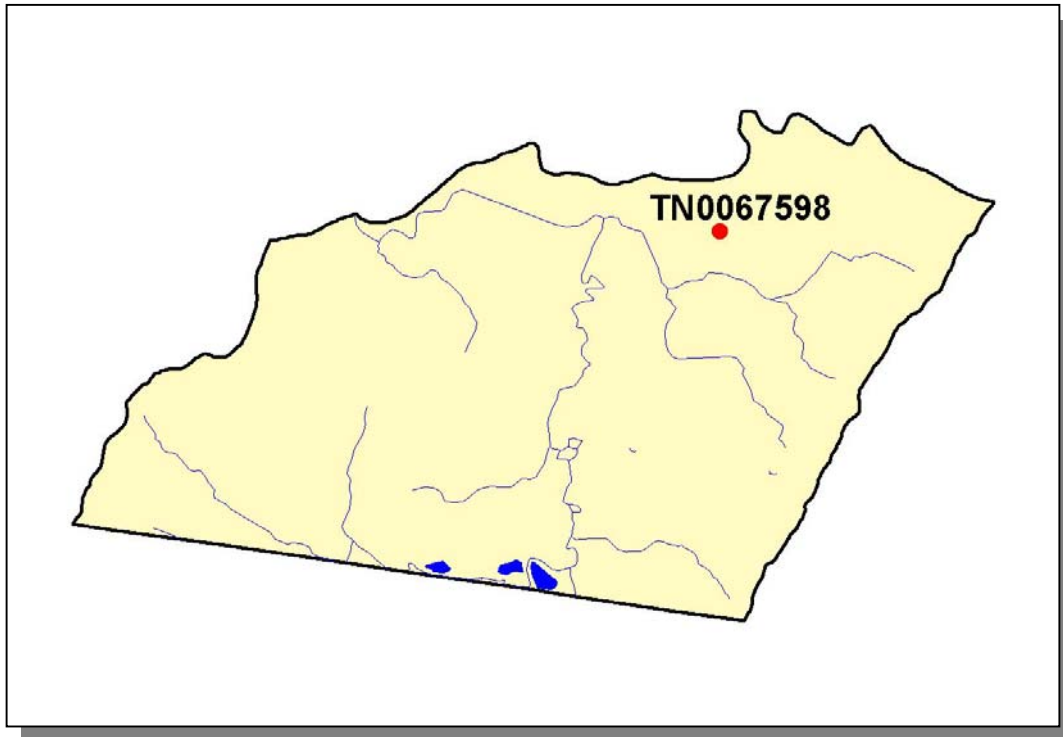
**Figure 4-38. Location of TMSP Sites in Subwatershed 060200010503.** More information, including the names of facilities, is provided in Appendix IV.



**4.2.A.iii.a.i. Dischargers to Water Bodies Listed on the 2004 303(d) List**

There is one NPDES facility discharging to water bodies listed on the 2004 303(d) list in Subwatershed 060200010503:

- TN0067598 (Hunter Oil Company) discharges to an unnamed tributary @ RM 0.4 to Dobbs Creek



**Figure 4-39. Location of NPDES Dischargers to Water Bodies Listed on the 2004 303(d) List in Subwatershed 051302060503.** More information, including the names of facilities, is provided in Appendix IV.

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PERMIT #	1Q10	3Q10	7Q10	3Q20	QDESIGN
TN0067598					

**Table 4-27. Receiving Stream Flow Information for NPDES Dischargers to Waterbodies Listed on the 2004 303(d) List in Subwatershed 060200010503.** Data are in million gallons per day (MGD). Data were obtained from the USGS publication Flow Duration and Low Flows of Tennessee Streams Through 1992 or from permit files.

PERMIT #	FLOW
TN0067598	X

**Table 4-28. Monitoring Requirements for NPDES Dischargers to Waterbodies Listed on the 2004 303(d) List in Subwatershed 060200010503.**

PERMIT #	OIL SHEEN
TN0067598	X

**Table 4-29. Organic Monitoring Requirements for NPDES Dischargers to Waterbodies Listed on the 2004 303(d) List in Subwatershed 060200010503.**

PERMIT #	FOAM	COLOR	FLOATING MATTER
TN0067598	X	X	X

**Table 4-30. Additional Monitoring Requirements for NPDES Dischargers to Waterbodies Listed on the 2004 303(d) List in Subwatershed 060200010503.**

PERMIT #	CBOD <sub>5</sub>	TSS	pH
TN0067598	X	X	X

**Table 4-31. Parameters Monitored for Daily Maximum Limits for NPDES Dischargers to Waterbodies Listed on the 2004 303(d) List in Subwatershed 060200010503.** CBOD<sub>5</sub>, Carbonaceous Biochemical Oxygen Demand (5-Day); TSS, Total Suspended Solids.

PERMIT #	OIL and GREASE
TN0067598	X

**Table 4-32. Organic Parameters Monitored for Daily Maximum Limits for NPDES Dischargers to Waterbodies Listed on the 2004 303(d) List in Subwatershed 060200010503.**

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**4.2.A.iii.b. Nonpoint Source Contributions.**

LIVESTOCK COUNTS				
Beef Cow	Cattle	Milk Cow	Chickens (Broilers Sold)	Hogs
11	24	<5	6,593	<5

**Table 4-33. Summary of Livestock Count Estimates in Subwatershed 060200010503.** According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

LIVESTOCK COUNTS							
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Chickens (Broilers Sold)	Hogs	Sheep
Hamilton	6,913	14,734	801	30	934,564	1,017	109

**Table 4-34. Summary of Livestock Count Estimates in Hamilton County.** According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.

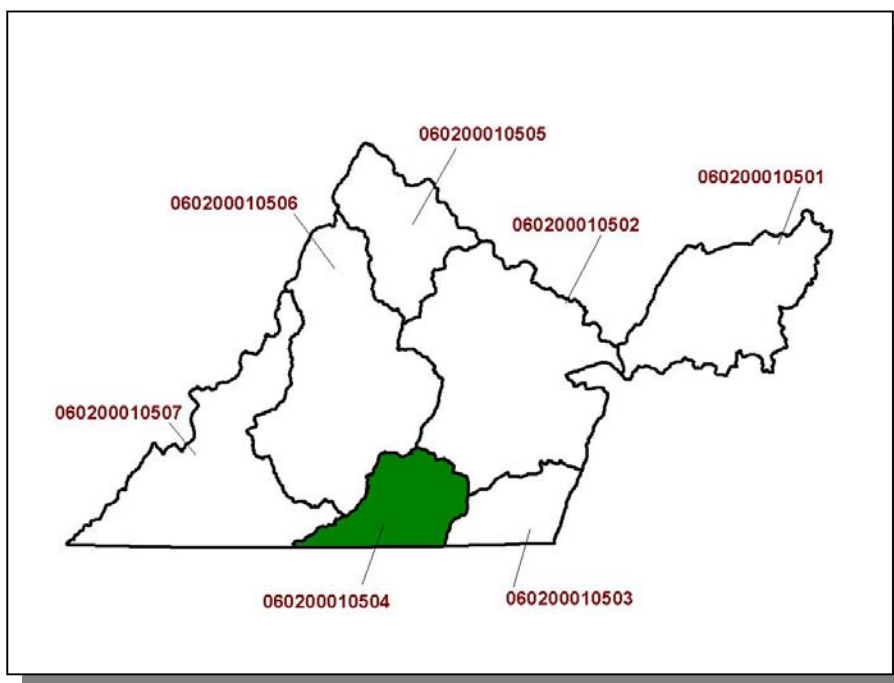
County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Hamilton	210.7	210.7	2.2	6.0

**Table 4-35. Forest Acreage and Annual Removal Rates (1987-1994) in Hamilton County.**

CROPS	TONS/ACRE/YEAR
Legumes (Pastureland)	0.07
Grass (Pastureland)	0.32
Grass (Hayland)	2.05
Legumes, Grass (Hayland)	0.20
Grass, Forbs, Legumes (Mixed Pasture)	0.27
Corn (Row Crops)	5.28
Potatoes (Row Crops)	5.26
Soybeans (Row Crops)	8.85
Oats (Close-Grown Cropland)	3.13
Wheat (Close-Grown Cropland)	3.14
All Other Close-Grown Cropland	1.99
Other Cropland not Planted	1.26
Farmsteads and Ranch Headquarters	0.31

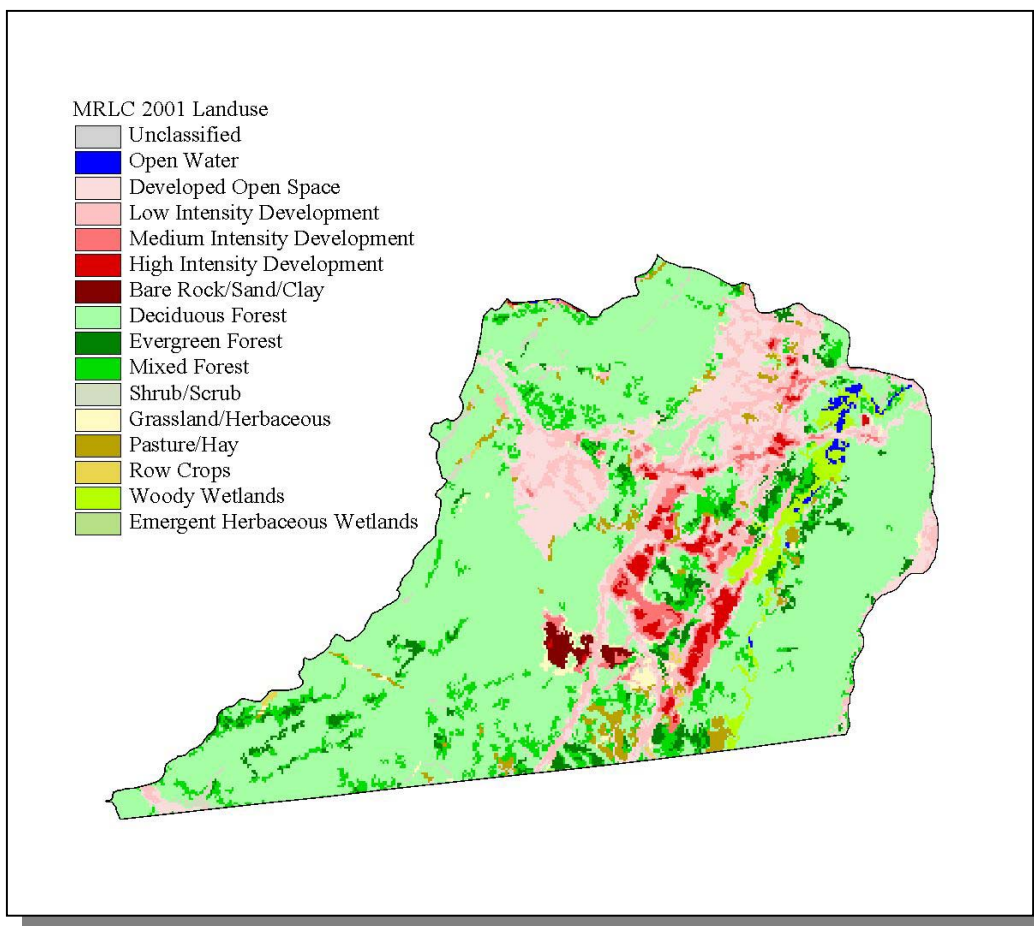
**Table 4-36. Annual Estimated Total Soil Loss in Subwatershed 060200010503.**

**4.2.A.iv. 060200010504 (Lookout Creek).**



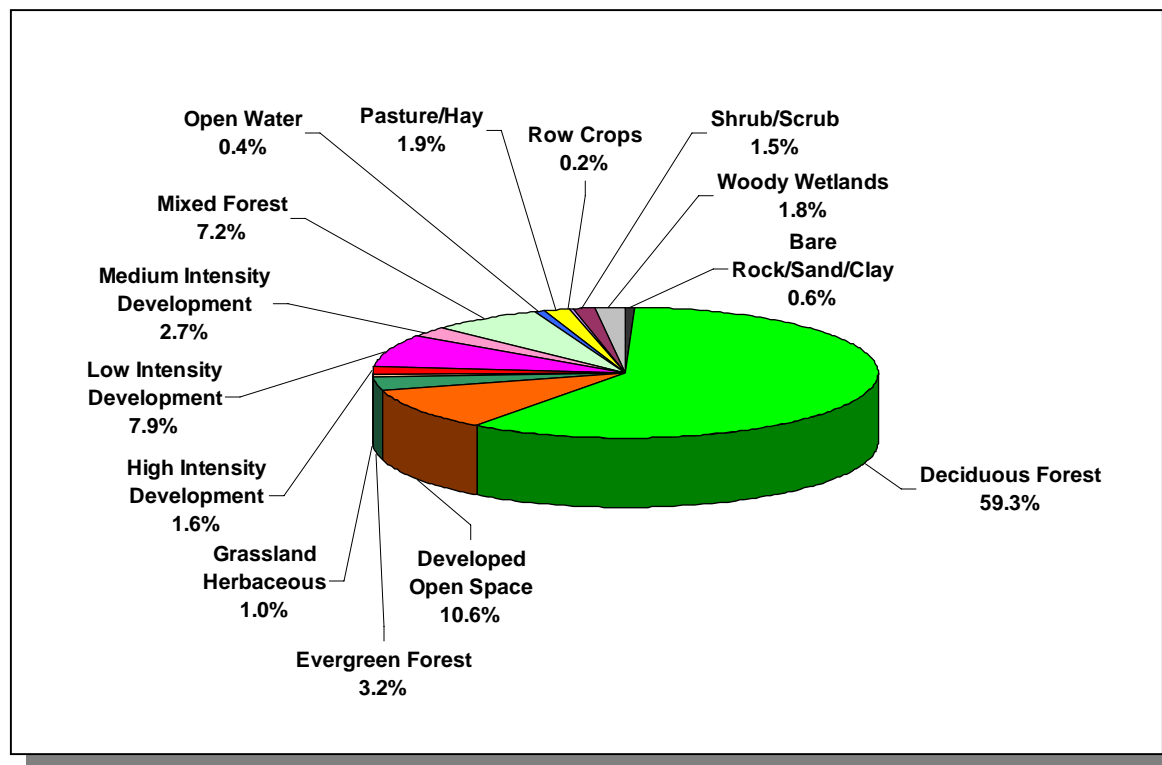
**Figure 4-40. Location of Subwatershed 060200010504.** All Group 4 Lower Tennessee River HUC-12 subwatershed boundaries in Tennessee are shown for reference.

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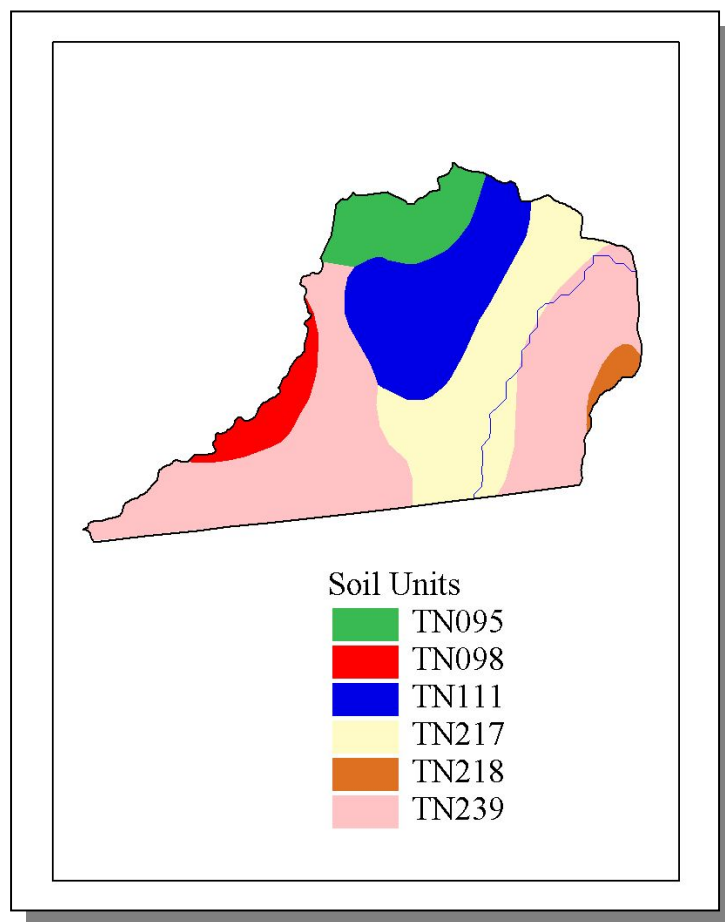
**Figure 4-41. Illustration of Land Use Distribution in Subwatershed 060200010504.**

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**Figure 4-42. Land Use Distribution in Subwatershed 060200010504.** More information is provided in Appendix IV.

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**Figure 4-43. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060200010504.**

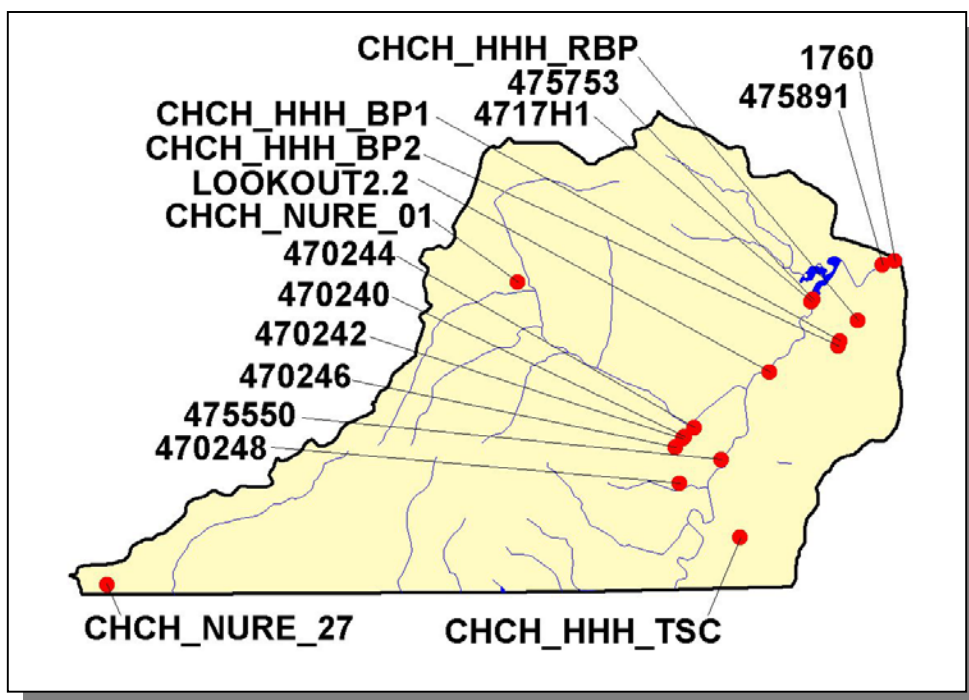
STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN095	0.00	B	2.35	5.12	Loam	0.31
TN098	1.00	C	3.98	4.82	Loam	0.32
TN111	0.00	C	1.41	5.10	Loam	0.34
TN217	0.00	C	2.34	5.32	Loam	0.35
TN218	0.00	C	3.41	4.95	Sandy Loam	0.23
TN239	2.00	C	2.94	4.86	Loam	0.22

**Table 4-37. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060200010504.** The definition of "Hydrologic Group" is provided in Appendix IV.

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County	COUNTY POPULATION			Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Hamilton	285,536	294,865	307,896	2.61	7,444	7,688	8,027	7.8

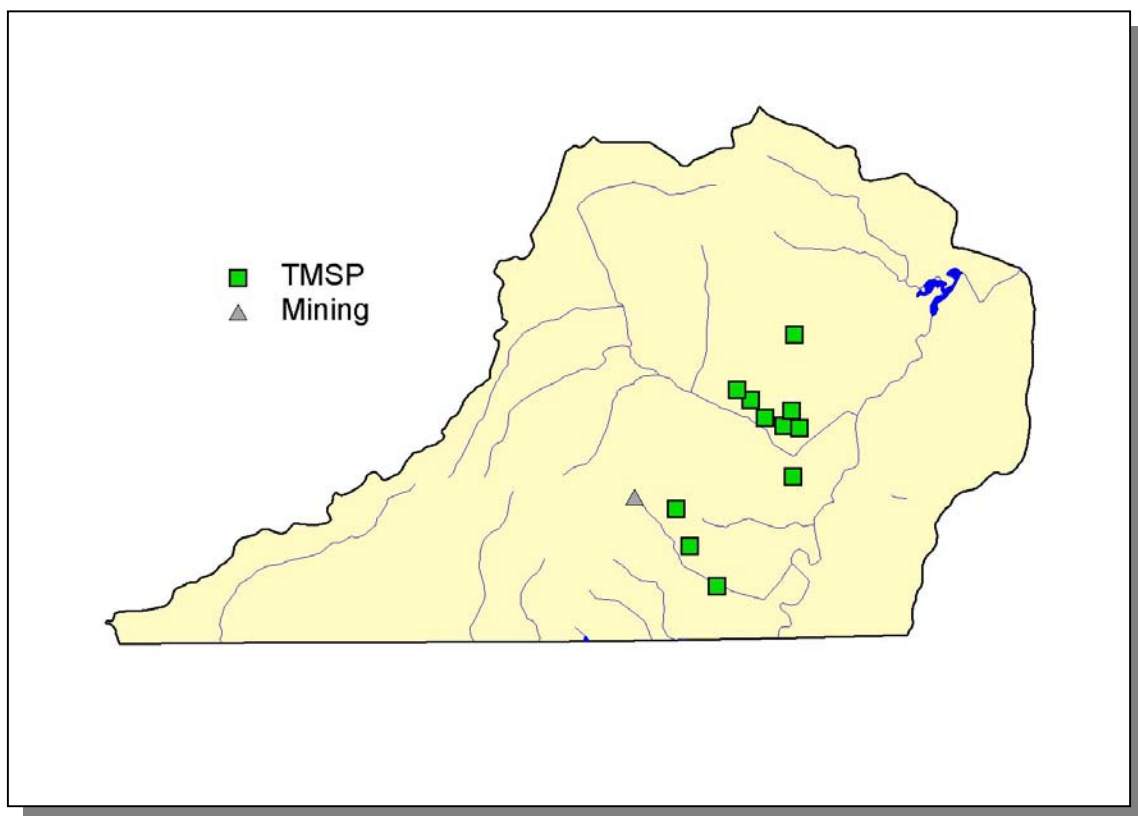
**Table 4-38. Population Estimates in Subwatershed 060200010504.**



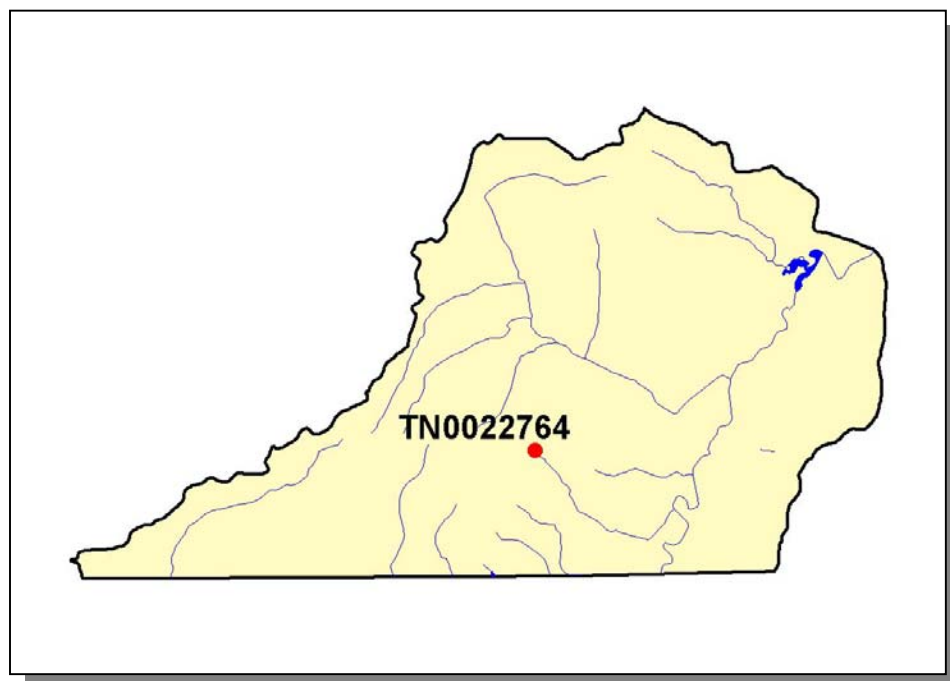
**Figure 4-44. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 060200010504.** More information, including site names and locations, and station numbers for sites located in the watershed outside of Tennessee, is provided in Appendix IV.



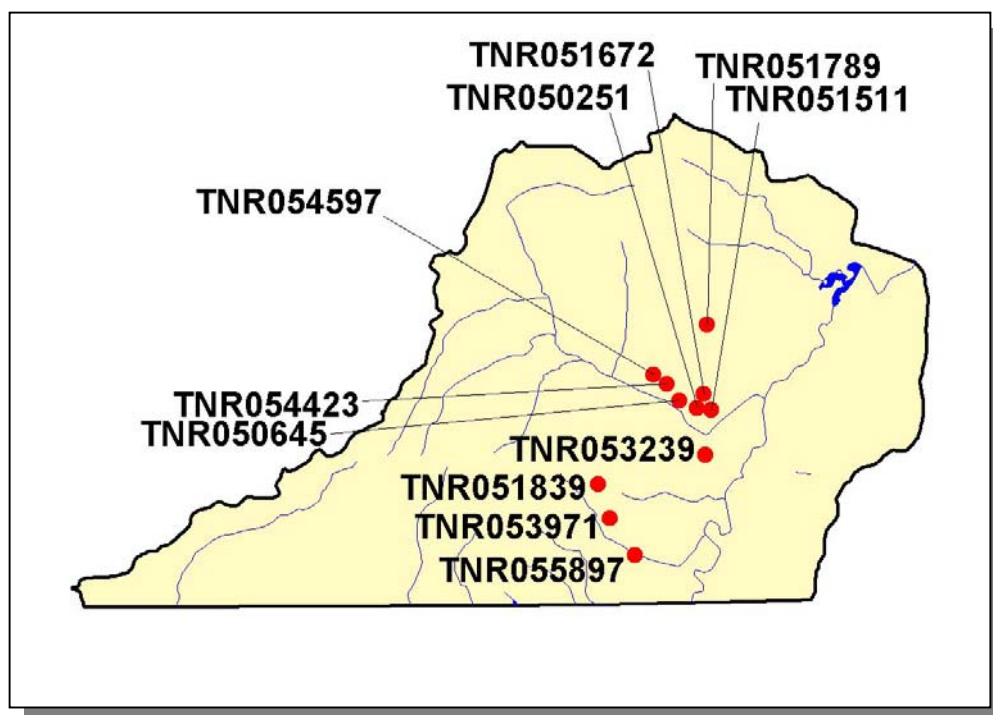
**4.2.A.iv.a. Point Source Contributions.**



**Figure 4-45. Location of Permits Issued in Subwatershed 060200010504.** More information, including the names of facilities, is provided in Appendix IV.



**Figure 4-46. Location of Active Mining Sites in Subwatershed 060200010504.** More information, including the names of mining operations, is provided in Appendix IV.



**Figure 4-47. Location of TMSP Sites in Subwatershed 060200010504.** More information, including the names of facilities, is provided in Appendix IV.

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**4.2.A.iv.b. Nonpoint Source Contributions.**

LIVESTOCK COUNTS				
Beef Cow	Cattle	Milk Cow	Chickens (Broilers Sold)	Hogs
15	33	<5	18,004	<5

**Table 4-39. Summary of Livestock Count Estimates in Subwatershed 060200010504.**  
According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

LIVESTOCK COUNTS							
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Chickens (Broilers Sold)	Hogs	Sheep
Hamilton	6,913	14,734	801	30	934,564	1,017	109
Marion	4,424	8,939	311	246	3,782,097	279	0

**Table 4-40. Summary of Livestock Count Estimates in Hamilton and Marion Counties.**  
According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.

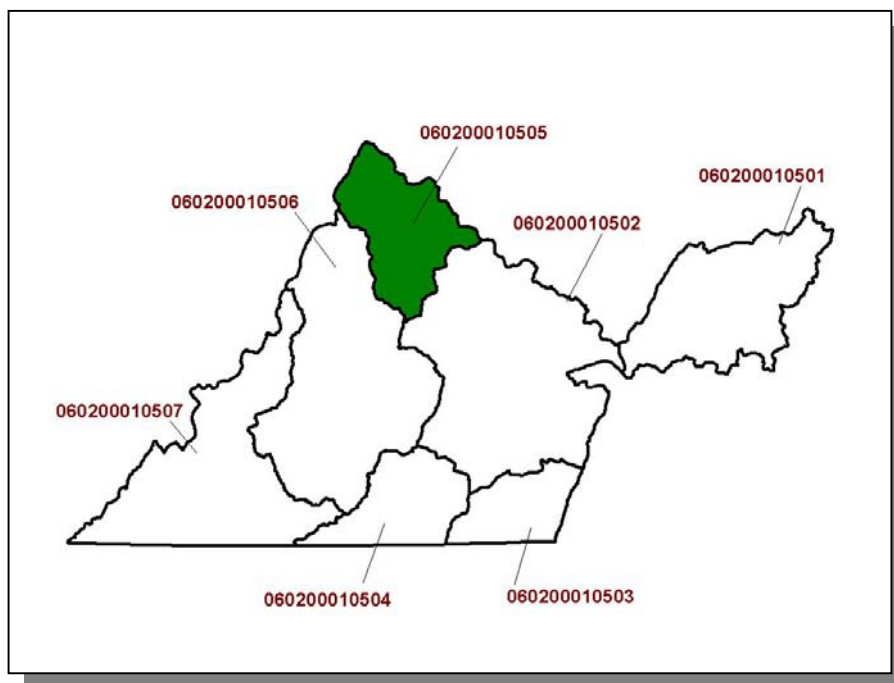
County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Hamilton	210.7	210.7	2.2	6.0
Marion				

**Table 4-41. Forest Acreage and Annual Removal Rates (1987-1994) in Hamilton and Marion Counties.**

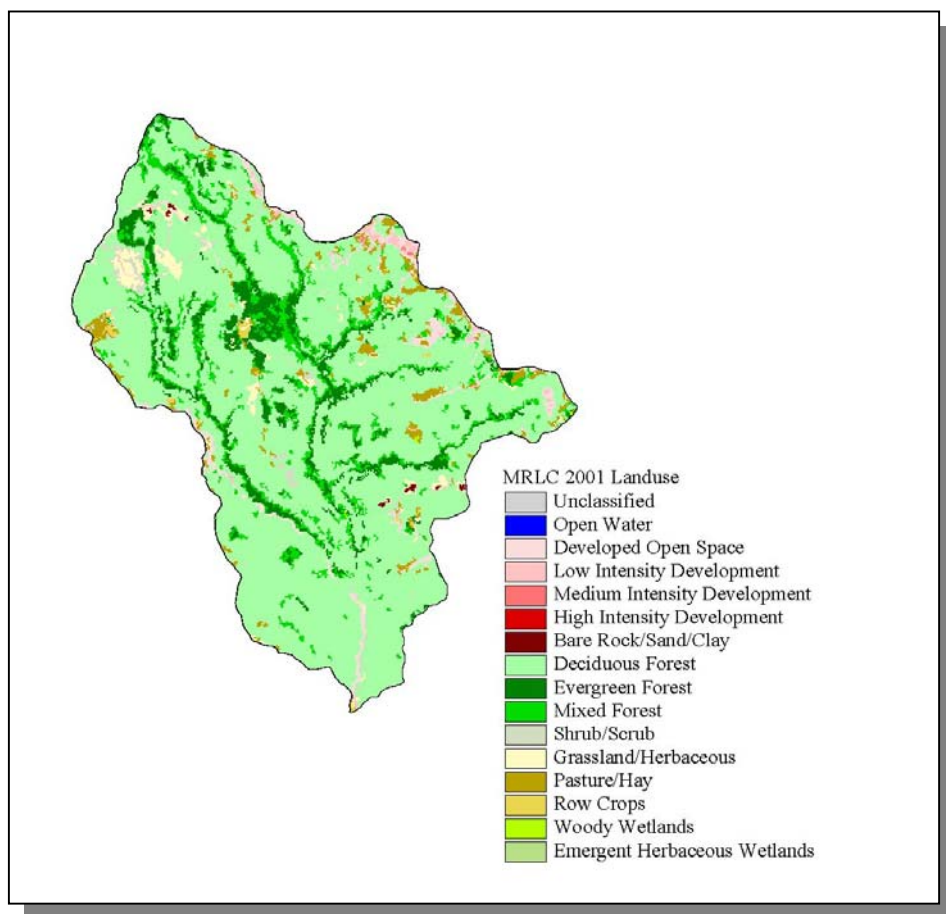
CROPS	TONS/ACRE/YEAR
Legumes (Pastureland)	0.07
Grass (Pastureland)	0.33
Grass (Hayland)	2.04
Legumes, Grass (Hayland)	0.20
Grass, Forbs, Legumes (Mixed Pasture)	0.27
Corn (Row Crops)	5.28
Potatoes (Row Crops)	5.26
Soybeans (Row Crops)	3.84
Oats (Close-Grown Cropland)	3.13
Wheat (Close-Grown Cropland)	3.14
All Other Close-Grown Cropland	1.99
Other (Horticultural)	0.29
Other Vegetable and Truck Crops	7.28
Other Cropland not Planted	1.26
Farmsteads and Ranch Headquarters	0.09

**Table 4-42. Annual Estimated Total Soil Loss in Subwatershed 060200010504.**

**4.2.A.v. 060200010505 (Suck Creek).**

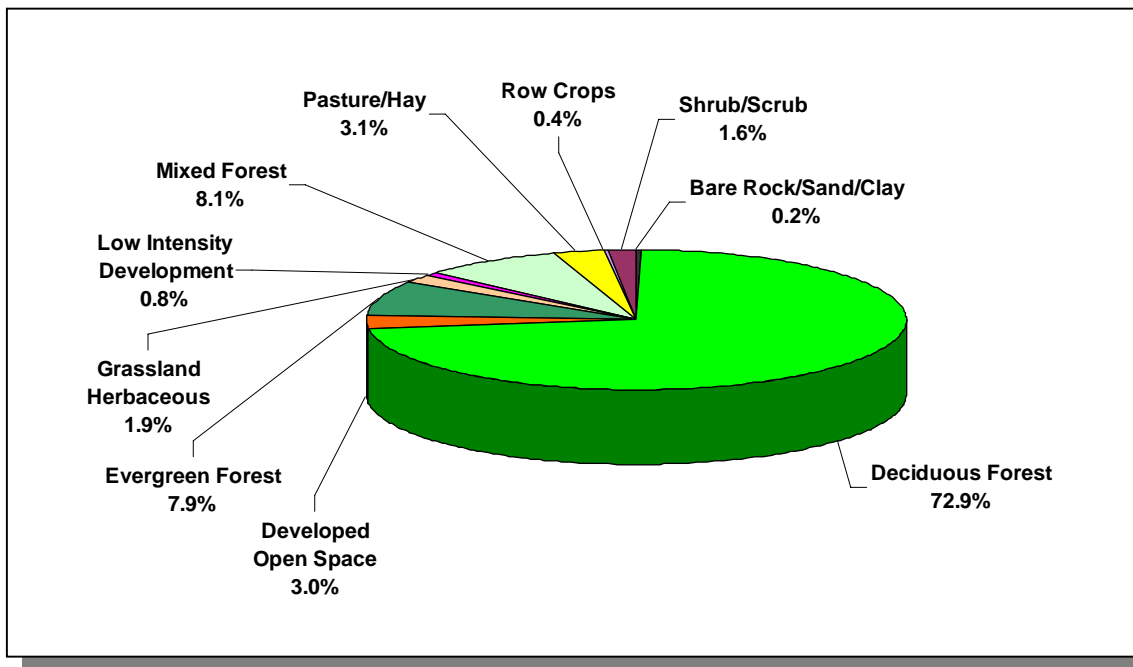


**Figure 4-48. Location of Subwatershed 060200010505.** All Group 4 Lower Tennessee River HUC-12 subwatershed boundaries in Tennessee are shown for reference.



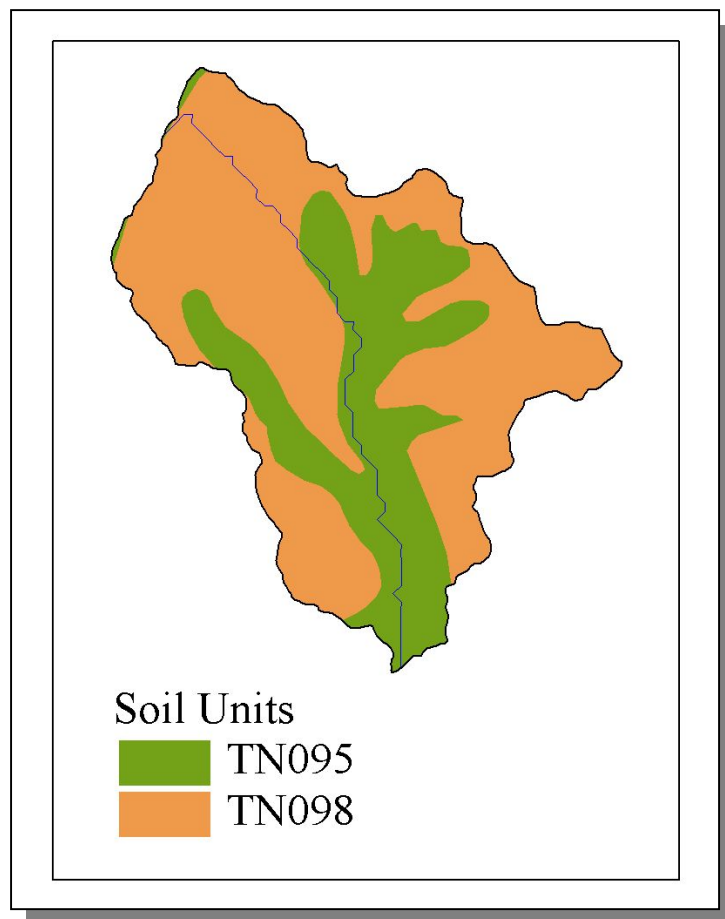
**Figure 4-49. Illustration of Land Use Distribution in Subwatershed 060200010505.**

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**Figure 4-50. Land Use Distribution in Subwatershed 060200010505.** More information is provided in Appendix IV.

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**Figure 4-51. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060200010505.**

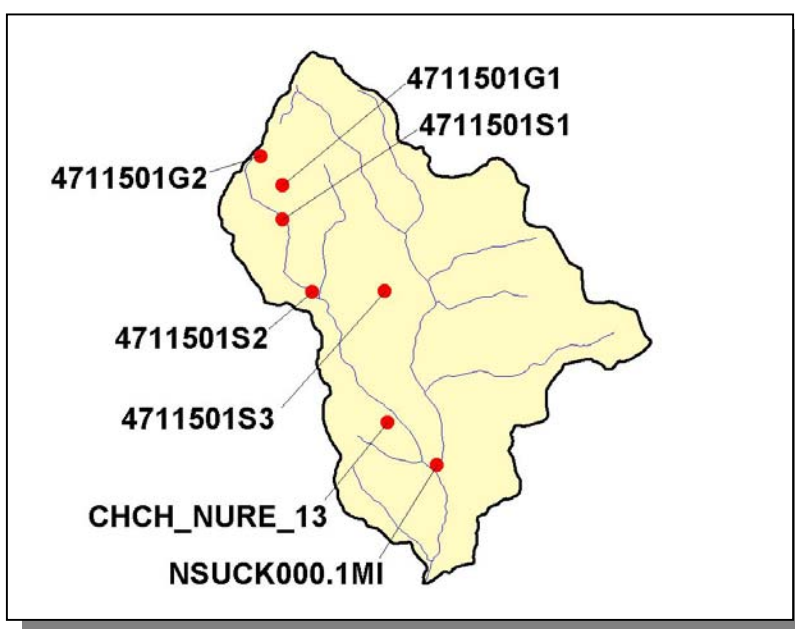
STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN095	0.00	B	2.35	5.12	Loam	0.31
TN098	1.00	C	3.98	4.82	Loam	0.32

**Table 4-43. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060200010505.** The definition of "Hydrologic Group" is provided in Appendix IV.

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County	COUNTY POPULATION			Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Hamilton	285,536	294,865	307,896	0.88	2,512	2,594	2,709	7.8
Marion	24,860	26,674	27,776	2.59	643	690	719	11.8
Sequatchie	8,863	10,119	11,370	1.57	139	159	179	28.8
<b>Total</b>	<b>319,259</b>	<b>331,658</b>	<b>347,042</b>		<b>3,294</b>	<b>3,443</b>	<b>3,607</b>	<b>9.5</b>

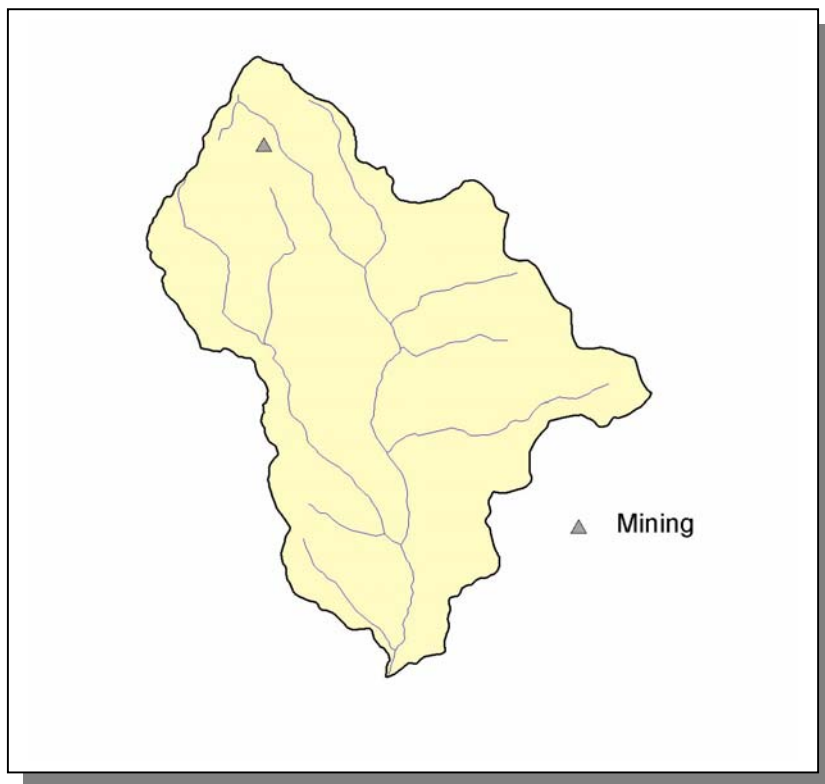
*Table 4-44. Population Estimates in Subwatershed 060200010505.*



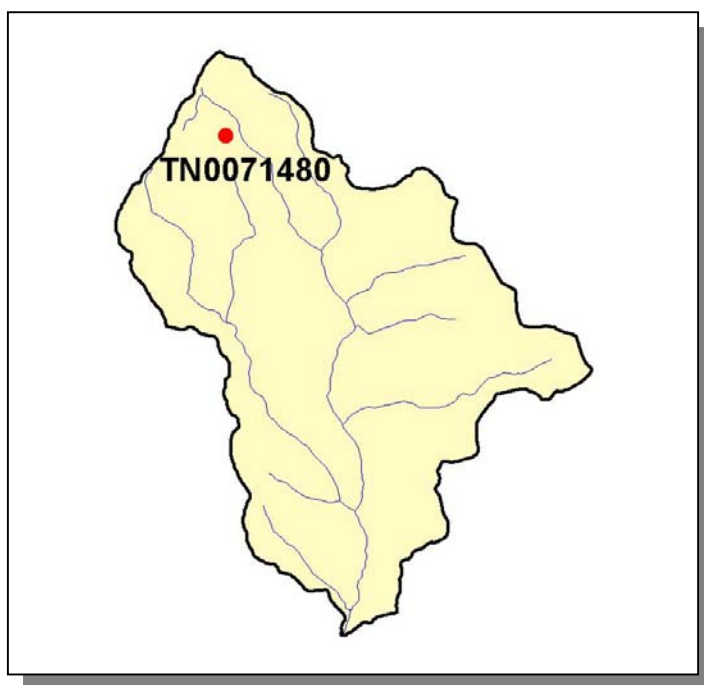
*Figure 4-52. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 060200010505. More information, including site names and locations, and station numbers for sites located in the watershed outside of Tennessee, is provided in Appendix IV.*



**4.2.A.v.a. Point Source Contributions.**



**Figure 4-53. Location of Permits Issued in Subwatershed 051301050505.** More information, including the names of facilities, is provided in Appendix IV.



**Figure 4-54. Location of Active Mining Sites in Subwatershed 060200010505.** More information, including the names of mining operations, is provided in Appendix IV.

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**4.2.A.v.b. Nonpoint Source Contributions.**

LIVESTOCK COUNTS				
Beef Cow	Cattle	Milk Cow	Chickens (Broilers Sold)	Hogs
33	76	<5	13,036	<5

**Table 4-45. Summary of Livestock Count Estimates in Subwatershed 060200010505.** According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

LIVESTOCK COUNTS							
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Chickens (Broilers Sold)	Hogs	Sheep
Hamilton	6,913	14,734	801	30	934,564	1,017	109
Marion	4,424	8,939	311	246	3,782,097	279	0
Sequatchie	2,763	6,739	221	6	960,000	0	0

**Table 4-46. Summary of Livestock Count Estimates in Hamilton, Marion, and Sequatchie Counties.** According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.

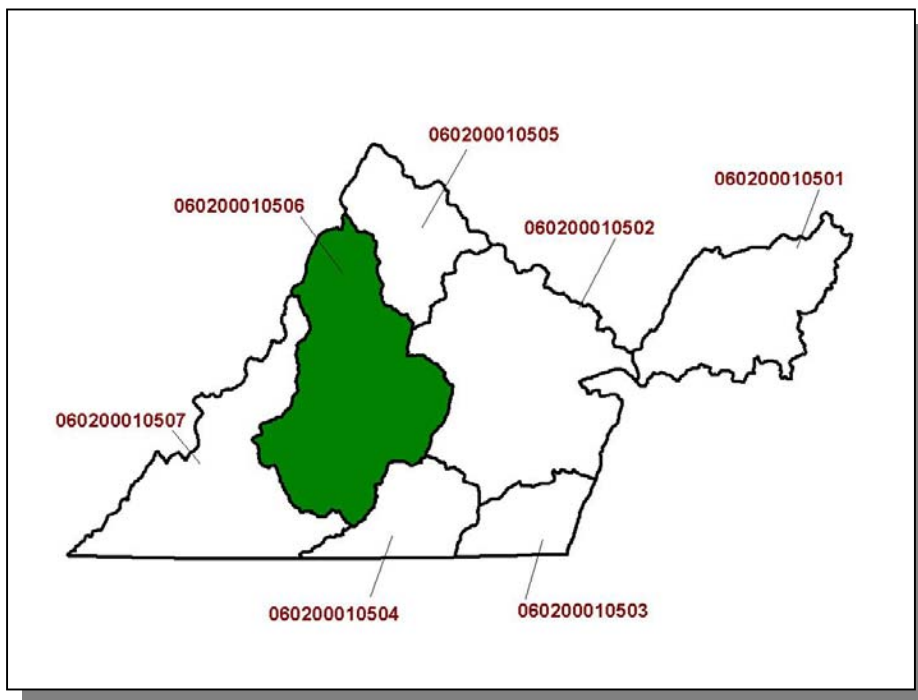
County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Hamilton	210.7	210.7	2.2	6.0
Marion				
Sequatchie	137.3	137.3	0.6	1.2

**Table 4-47. Forest Acreage and Annual Removal Rates (1987-1994) in Hamilton, Marion, and Sequatchie Counties.**

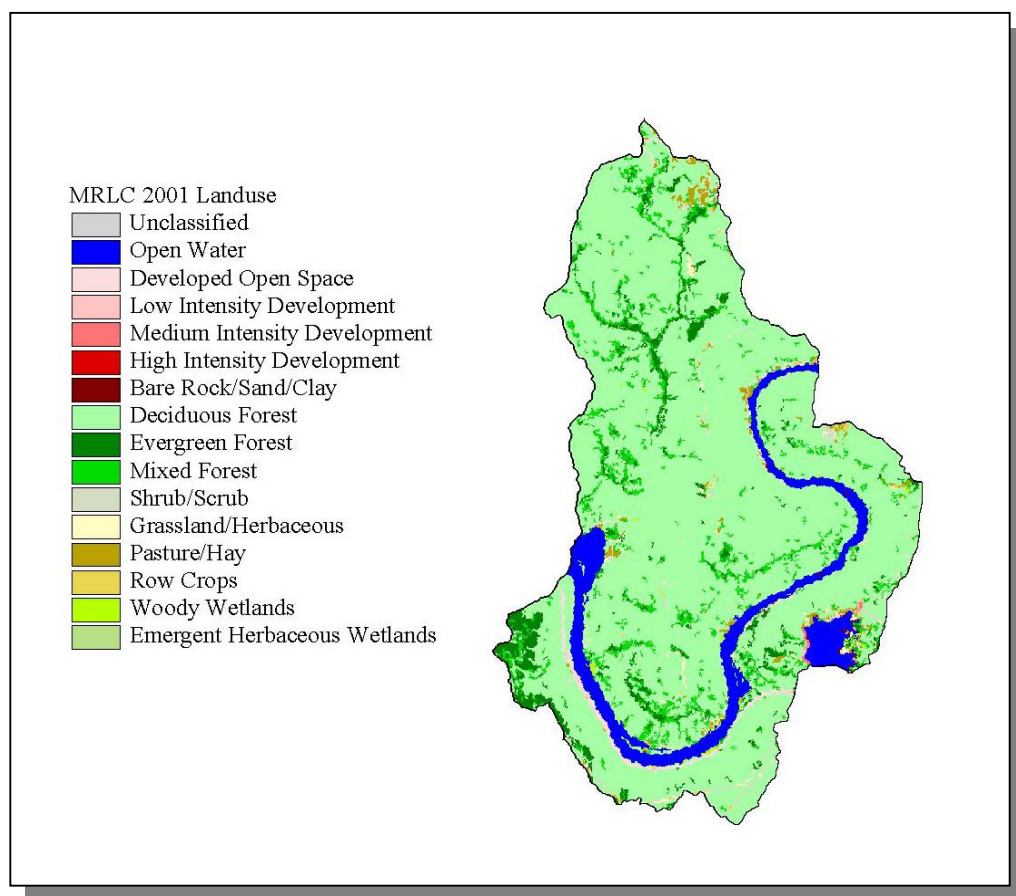
CROPS	TONS/ACRE/YEAR
Legumes (Pastureland)	0.07
Grass (Pastureland)	0.64
Grass (Hayland)	1.50
Legumes, Grass (Hayland)	0.21
Grass, Forbs, Legumes (Mixed Pasture)	0.44
Corn (Row Crops)	3.75
Soybeans (Row Crops)	4.56
Oats (Close-Grown Cropland)	3.13
Wheat (Close-Grown Cropland)	3.14
All Other Close-Grown Cropland	1.99
Other (Horticultural)	0.29
Other Vegetable and Truck Crops	7.28
Farmsteads and Ranch Headquarters	0.16

**Table 4-48. Annual Estimated Total Soil Loss in Subwatershed 060200010505.**

**4.2.A.vi. 060200010506 (Tennessee River).**

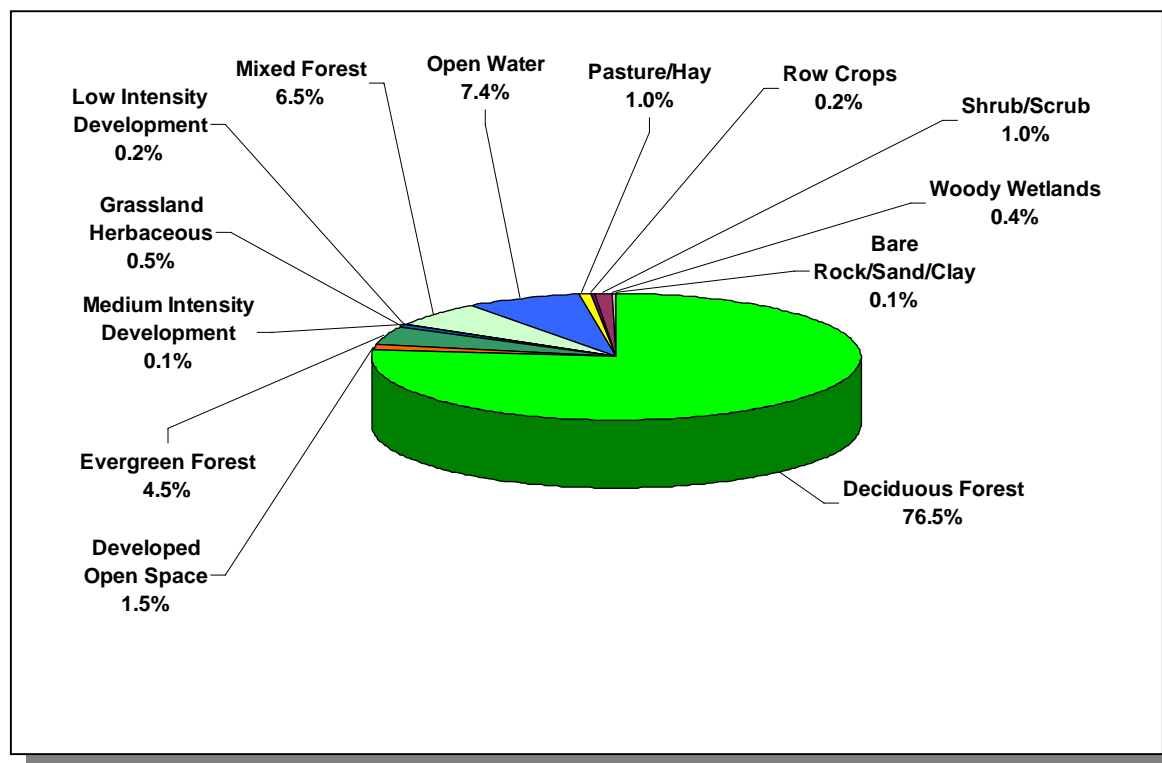


**Figure 4-55. Location of Subwatershed 060200010506.** All Group 4 Lower Tennessee River HUC-12 subwatershed boundaries in Tennessee are shown for reference.



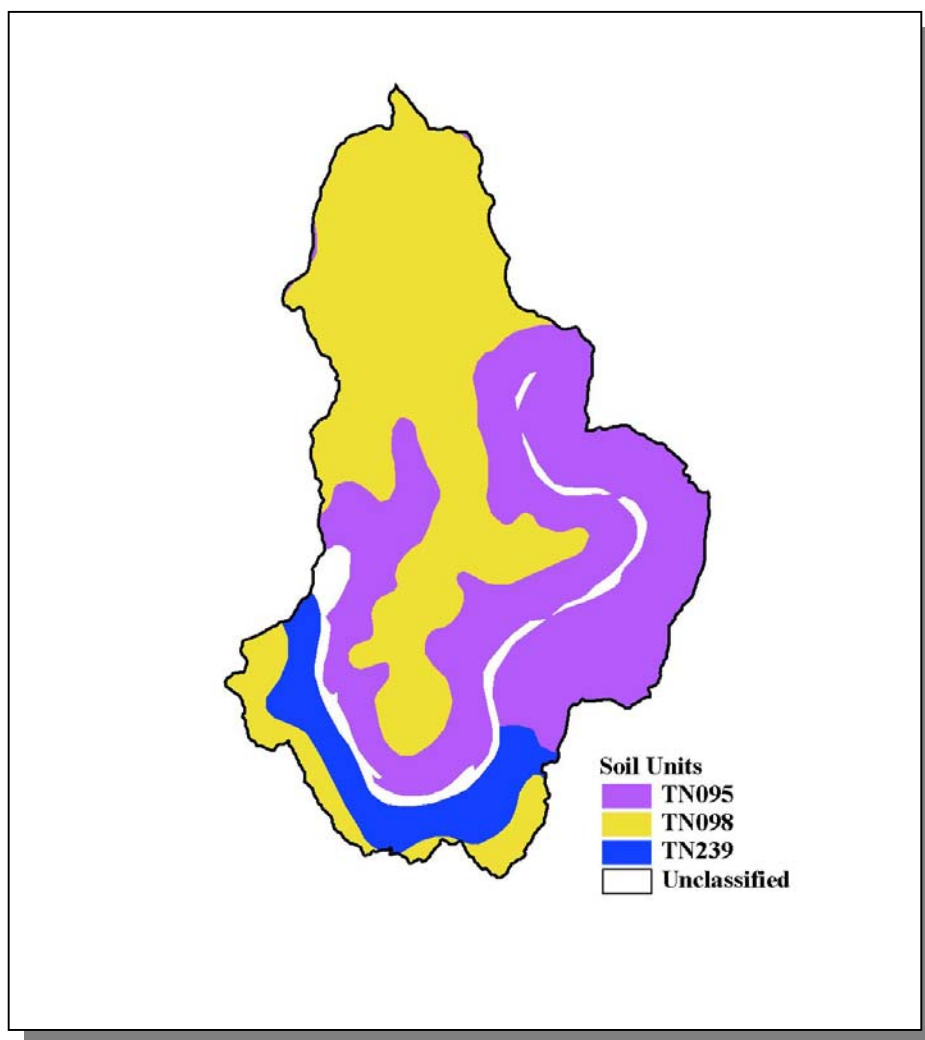
**Figure 4-56. Illustration of Land Use Distribution in Subwatershed 060200010506.**

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*Figure 4-57. Land Use Distribution in Subwatershed 060200010506. More information is provided in Appendix IV.*

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**Figure 4-58. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060200010506.**

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN095	0.00	B	2.35	5.12	Loam	0.31
TN098	1.00	C	3.98	4.82	Loam	0.32
TN239	2.00	C	2.94	4.86	Loam	0.22

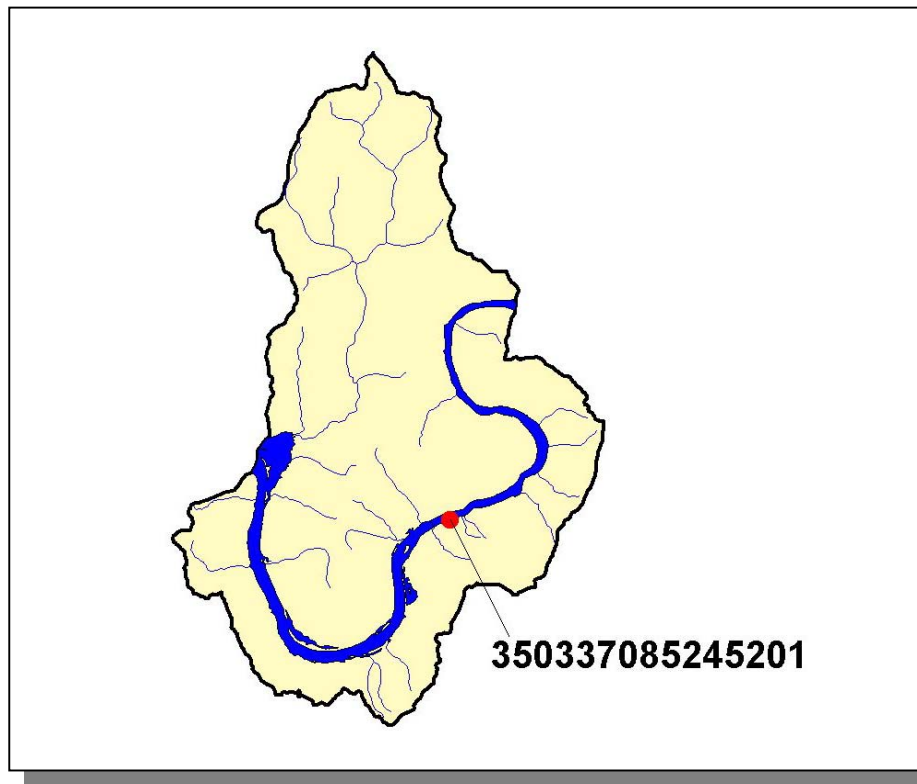
**Table 4-49. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060200010506.** The definition of "Hydrologic Group" is provided in Appendix IV.

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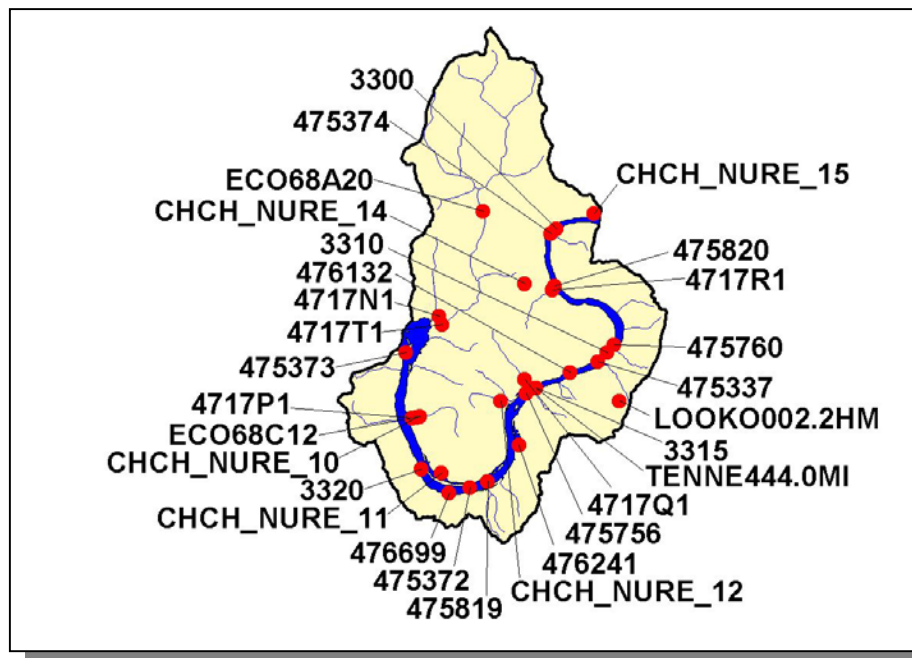
County	COUNTY POPULATION			Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Hamilton	285,536	294,865	307,896	0.32	922	952	994	7.8
Marion	24,860	26,674	27,776	10.54	2,620	2,811	2,928	11.8
<b>Total</b>	<b>310,396</b>	<b>321,539</b>	<b>335,672</b>		<b>3,542</b>	<b>3,763</b>	<b>3,922</b>	<b>10.7</b>

*Table 4-50. Population Estimates in Subwatershed 060200010506.*





**Figure 4-59. Location of Historical Streamflow Data Collection Sites in Subwatershed 060200010506.** More information is provided in Appendix IV.



**Figure 4-60. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 060200010506.** More information, including site names and locations, and station numbers for sites located in the watershed outside of Tennessee, is provided in Appendix IV.

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**4.2.A.vi.a. Point Source Contributions.**

There are no point sources in this subwatershed.

**4.2.A.vi.b. Nonpoint Source Contributions.**

LIVESTOCK COUNTS				
Beef Cow	Cattle	Milk Cow	Chickens (Broilers Sold)	Hogs
17	35	<5	13,528	<5

**Table 4-51. Summary of Livestock Count Estimates in Subwatershed 060200010506.**  
According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

LIVESTOCK COUNTS							
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Chickens (Broilers Sold)	Hogs	Sheep
Hamilton	6,913	14,734	801	30	934,564	1,017	109
Marion	4,424	8,939	311	246	3,782,097	279	0

**Table 4-52. Summary of Livestock Count Estimates in Hamilton and Marion Counties.**  
According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Hamilton	210.7	210.7	2.2	6.0
Marion				

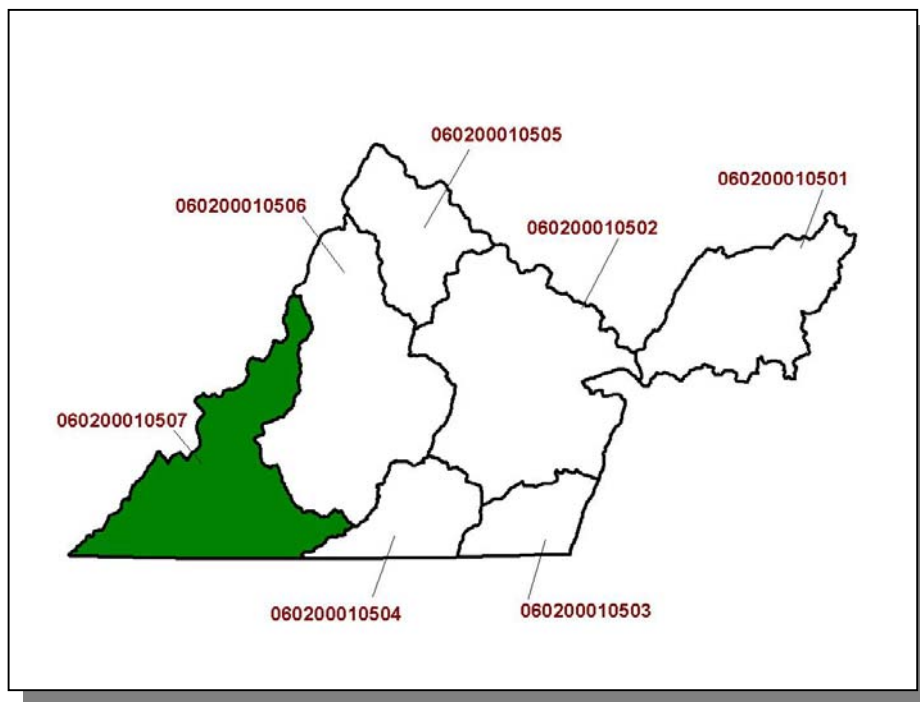
**Table 4-53. Forest Acreage and Annual Removal Rates (1987-1994) in Hamilton and Marion Counties.**

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<b>CROPS</b>	<b>TONS/ACRE/YEAR</b>
Legumes (Pastureland)	0.07
Grass (Pastureland)	0.61
Grass (Hayland)	2.33
Legumes, Grass (Hayland)	0.20
Grass, Forbs, Legumes (Mixed Pasture)	0.29
Corn (Row Crops)	3.61
Soybeans (Row Crops)	4.56
Oats (Close-Grown Cropland)	3.13
Wheat (Close-Grown Cropland)	3.14
All Other Close-Grown Cropland	1.99
Other (Horticultural)	0.29
Other Vegetable and Truck Crops	7.28
Farmsteads and Ranch Headquarters	0.19

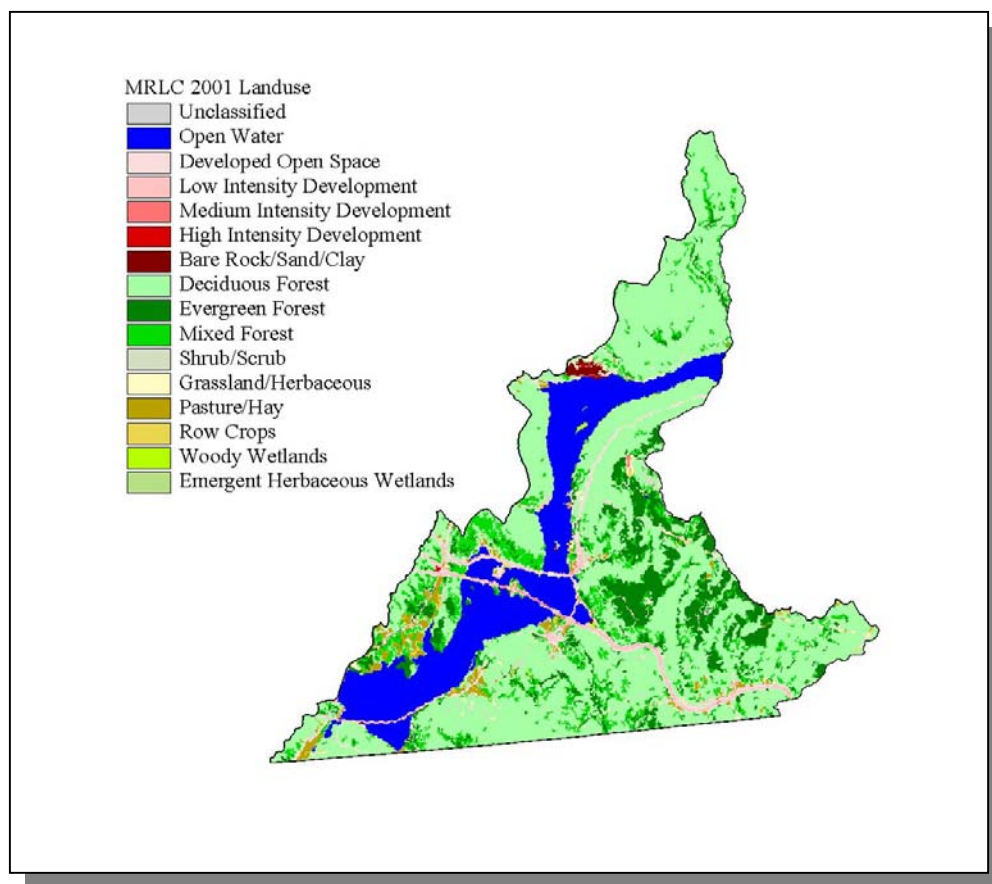
**Table 4-54. Annual Estimated Total Soil Loss in Subwatershed 060200010506.**

**4.2.A.vii. 060200010507 (Tennessee River).**



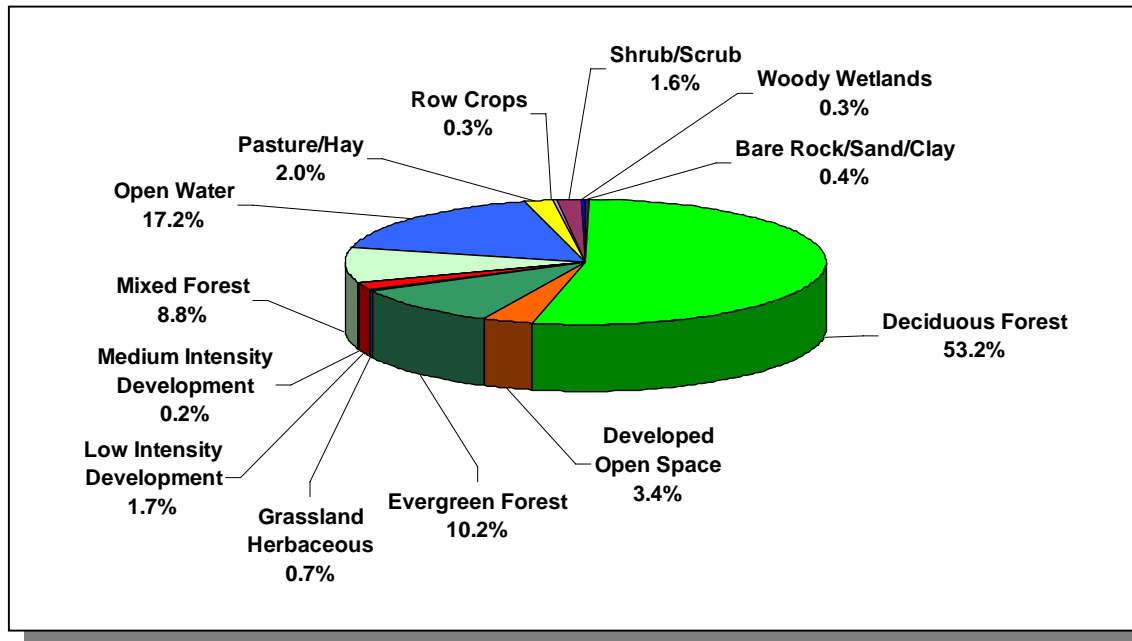
**Figure 4-61. Location of Subwatershed 060200010507.** All Group 4 Lower Tennessee River HUC-12 subwatershed boundaries in Tennessee are shown for reference.

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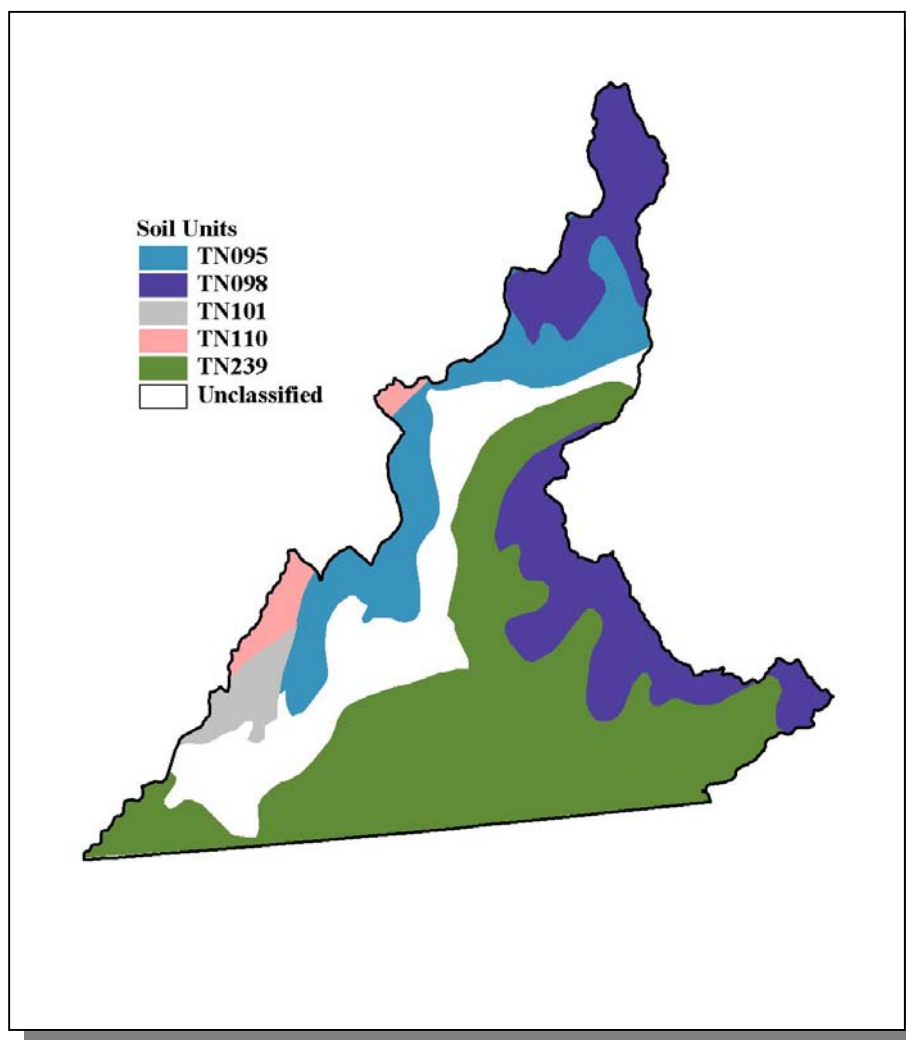
**Figure 4-62. Illustration of Land Use Distribution in Subwatershed 060200010507.**

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**Figure 4-63. Land Use Distribution in Subwatershed 060200010507.** More information is provided in Appendix IV.

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**Figure 4-64. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060200010507.**

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN095	0.00	B	2.35	5.12	Loam	0.31
TN098	1.00	C	3.98	4.82	Loam	0.32
TN101	0.00	B	1.71	5.39	Loam	0.35
TN110	0.00	B	2.22	4.96	Loam	0.31
TN239	2.00	C	2.94	4.86	Loam	0.22

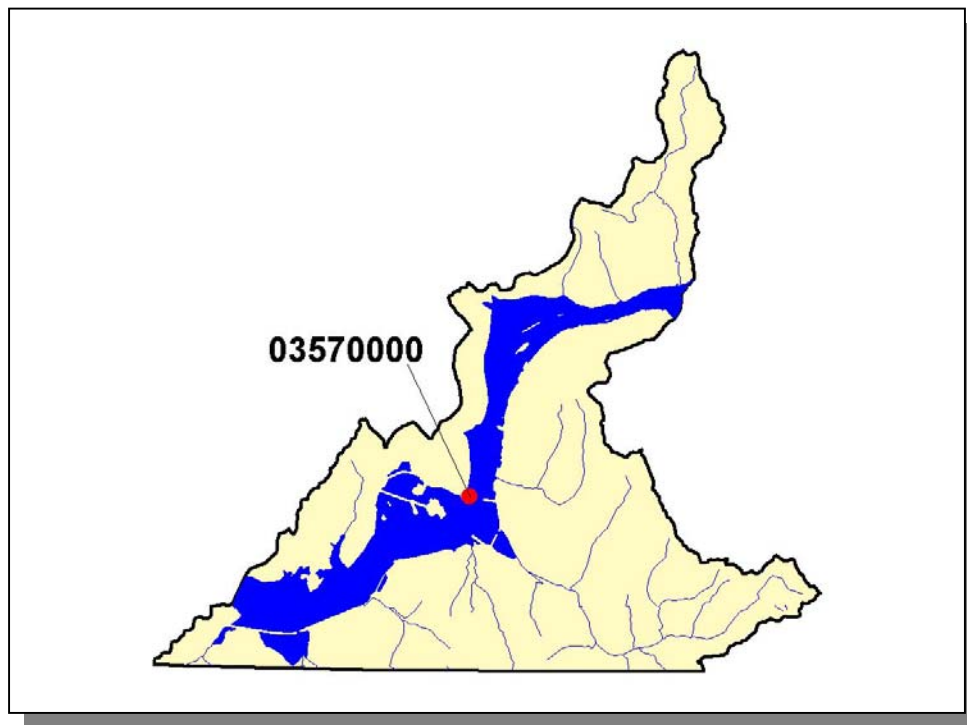
**Table 4-55. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060200010507.** The definition of "Hydrologic Group" is provided in Appendix IV.

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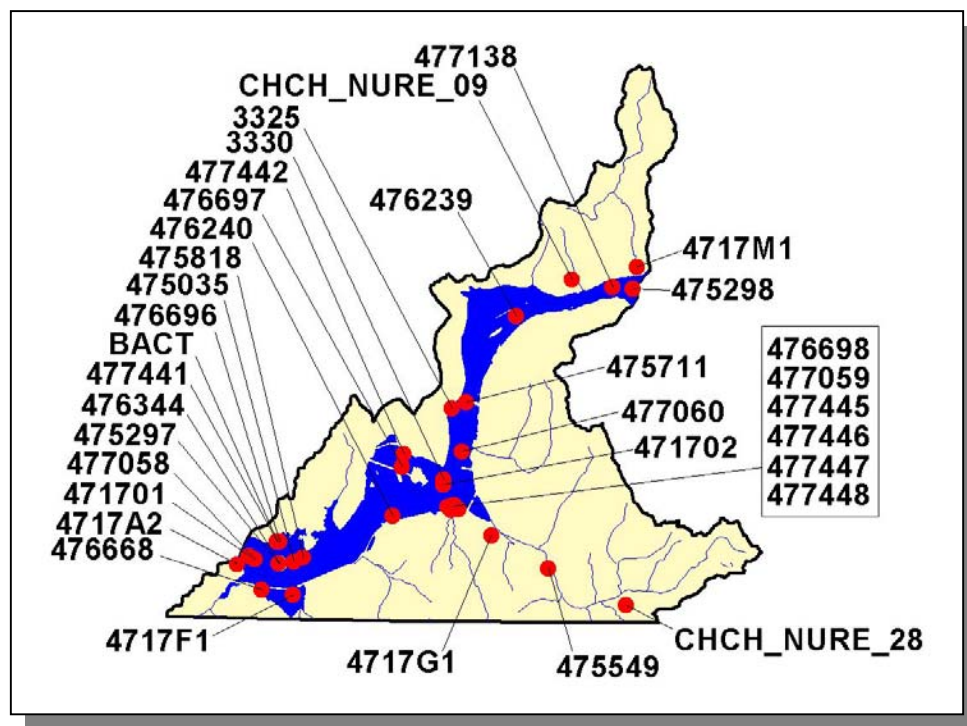
County	COUNTY POPULATION			Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Hamilton	285,536	294,865	307,896	0.13	364	376	392	7.7
Marion	24,860	26,674	27,776	8.07	2,006	2,152	2,241	11.7
<b>Total</b>	<b>310,396</b>	<b>321,539</b>	<b>335,672</b>		<b>2,370</b>	<b>2,528</b>	<b>2,633</b>	<b>11.1</b>

*Table 4-56. Population Estimates in Subwatershed 060200010507.*



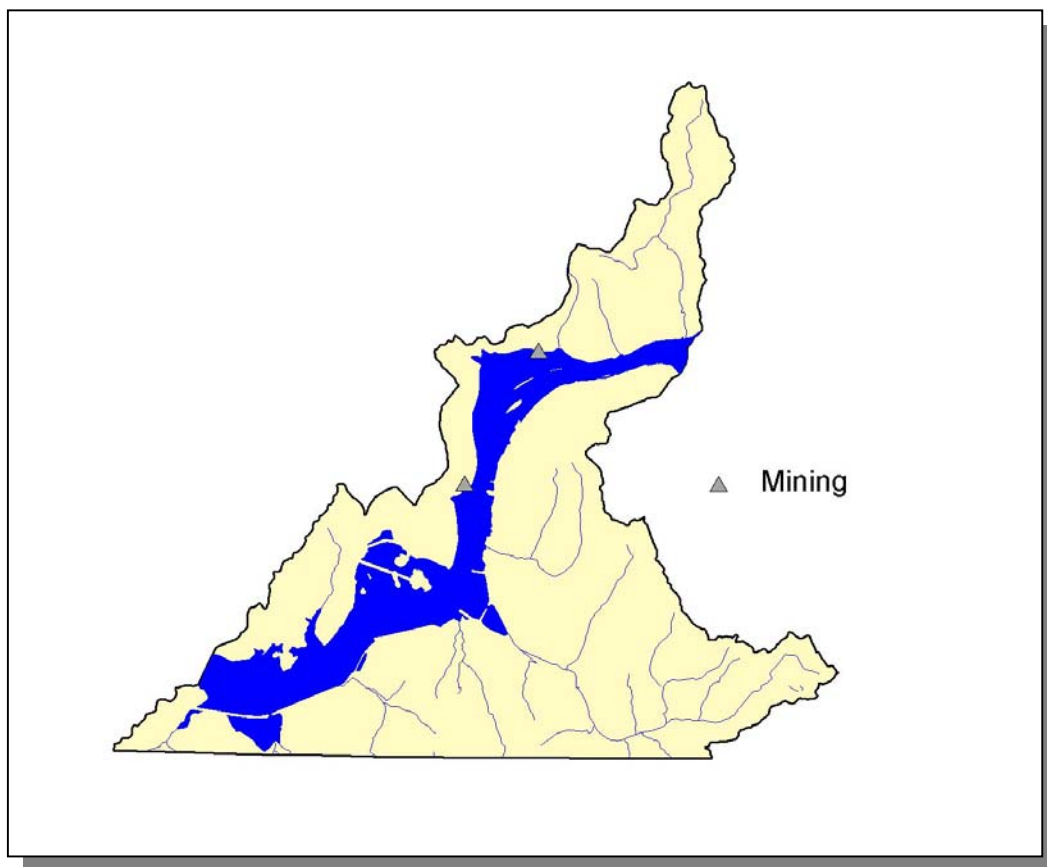


**Figure 4-65. Location of Historical Streamflow Data Collection Sites in Subwatershed 060200010507.** More information is provided in Appendix IV.



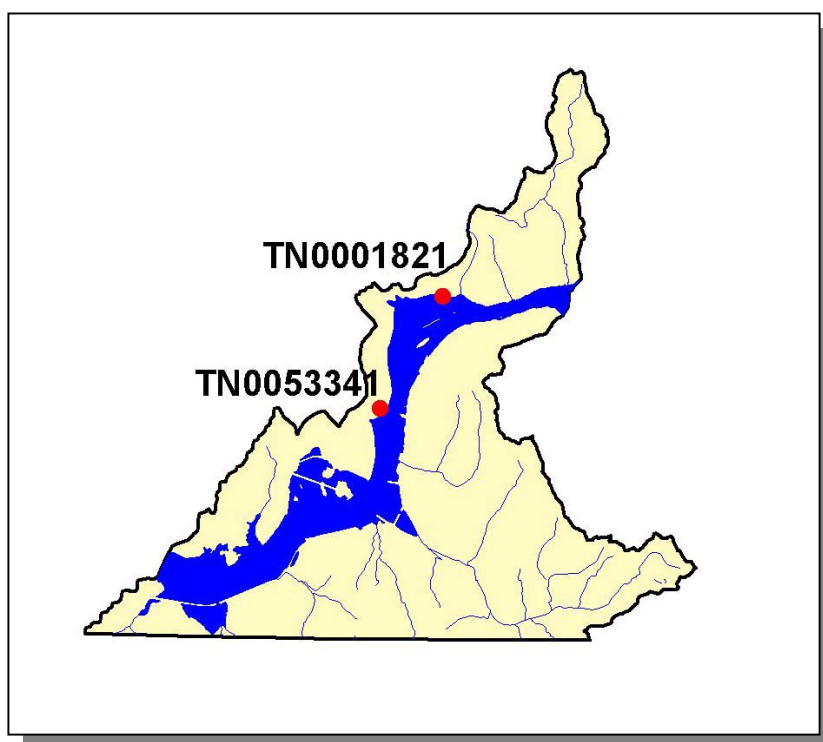
**Figure 4-66. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 060200010507.** More information, including site names and locations, and station numbers for sites located in the watershed outside of Tennessee, is provided in Appendix IV.

**4.2.A.vii.a. Point Source Contributions.**



**Figure 4-67. Location of Permits Issued in Subwatershed 051301050507.** More information, including the names of facilities, is provided in Appendix IV.

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**Figure 4-68. Location of Active Mining Sites in Subwatershed 060200010507.** More information, including the names of mining operations, is provided in Appendix IV.

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**4.2.A.viii.b. Nonpoint Source Contributions.**

LIVESTOCK COUNTS				
Beef Cow	Cattle	Milk Cow	Chickens (Broilers Sold)	Hogs
91	184	6	81,376	6

**Table 4-57. Summary of Livestock Count Estimates in Subwatershed 060200010507.**  
According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

LIVESTOCK COUNTS							
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Chickens (Broilers Sold)	Hogs	Sheep
Hamilton	6,913	14,734	801	30	934,564	1,017	109
Marion	4,424	8,939	311	246	3,782,097	279	0

**Table 4-58. Summary of Livestock Count Estimates in Hamilton and Marion Counties.**  
According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.

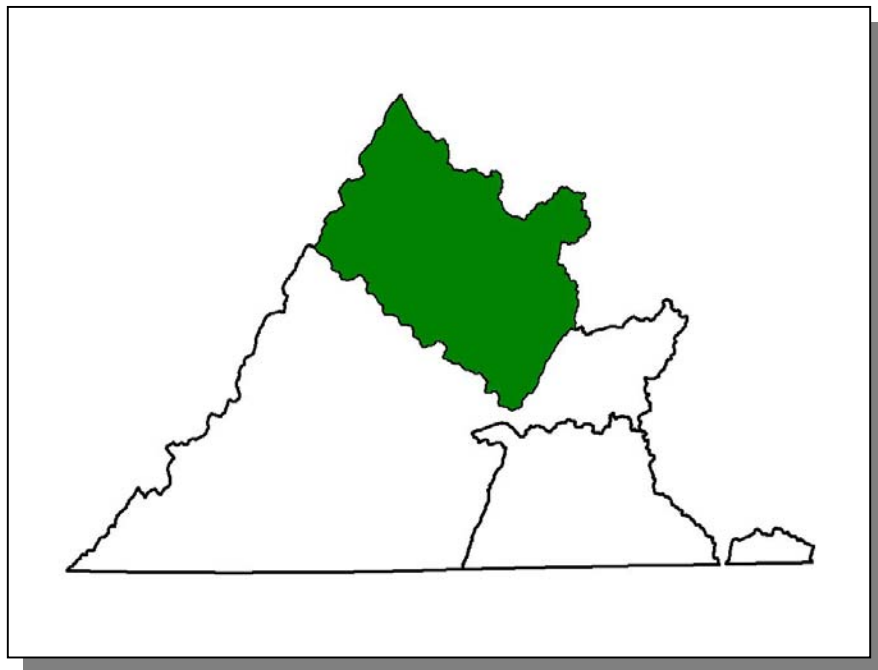
County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Hamilton	210.7	210.7	2.2	6.0
Marion				

**Table 4-59. Forest Acreage and Annual Removal Rates (1987-1994) in Hamilton and Marion Counties.**

CROPS	TONS/ACRE/YEAR
Legumes (Pastureland)	0.07
Grass (Pastureland)	0.59
Grass (Hayland)	0.84
Legumes, Grass (Hayland)	0.20
Grass, Forbs, Legumes (Mixed Pasture)	0.29
Corn (Row Crops)	3.58
Potatoes (Row Crops)	5.26
Soybeans (Row Crops)	4.51
Oats (Close Grown Cropland)	3.13
Wheat (Close-Grown Cropland)	3.14
All Other Close-Grown Cropland	1.99
Other (Horticultural)	0.29
Other Vegetable and Truck Crops	7.28
Other Cropland not Planted	1.26
Farmsteads and Ranch Headquarters	0.18

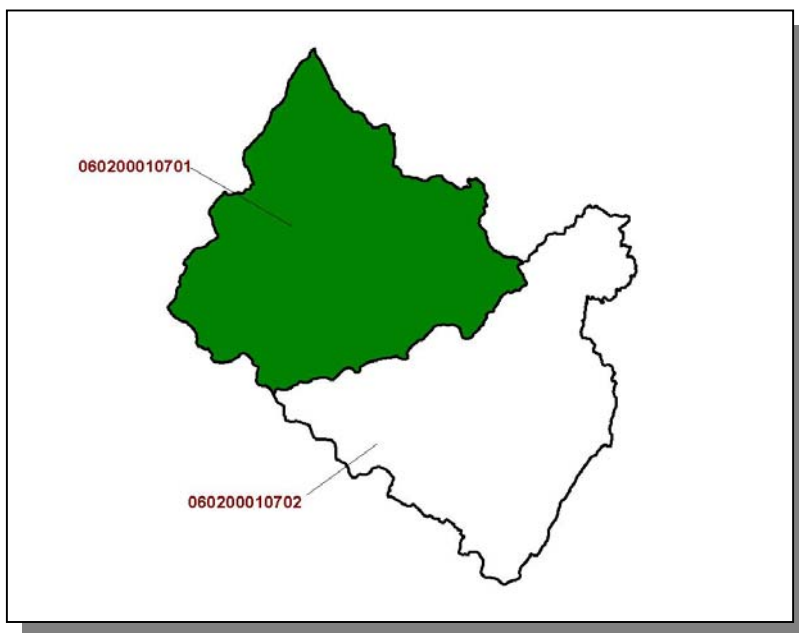
**Table 4-60. Annual Estimated Total Soil Loss in Subwatershed 060200010507.**

**4.2.B. 0602000107.**



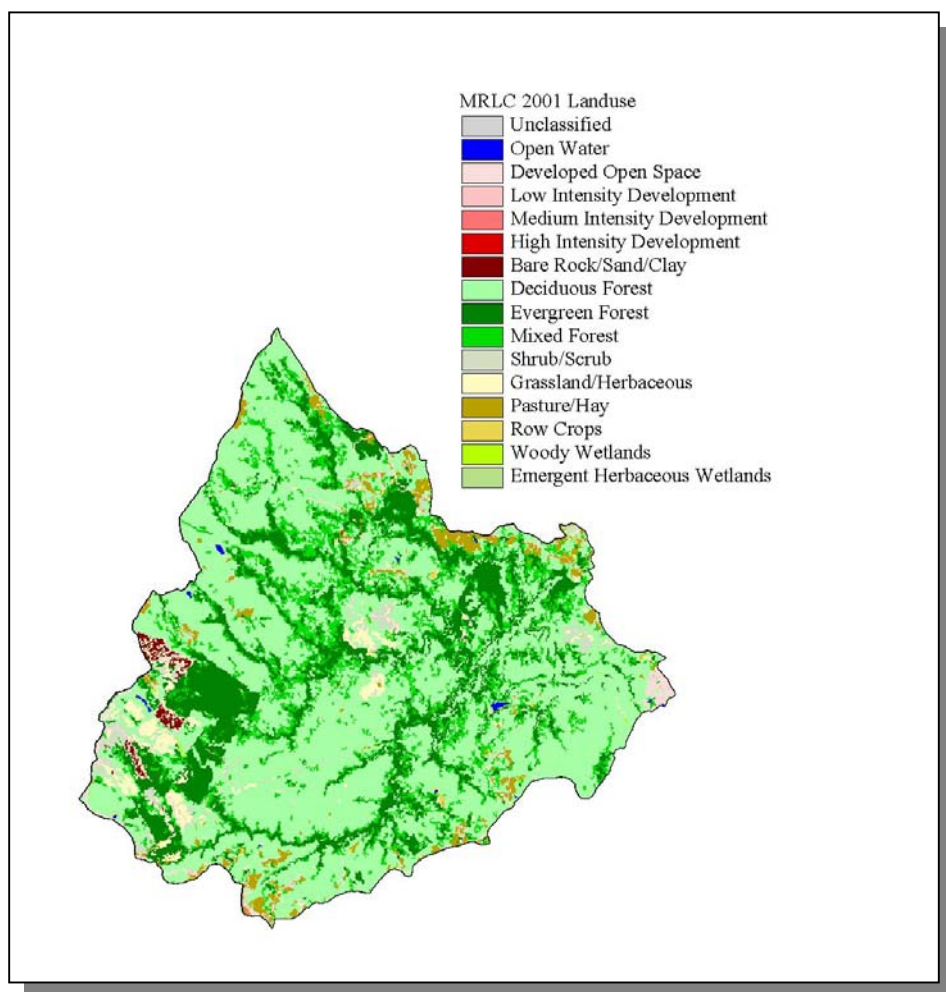
**Figure 4-69. Location of Subwatershed 0602000107.** All Group 4 Lower Tennessee River HUC-10 subwatershed boundaries in Tennessee are shown for reference.

**4.2.B.i. 060200010701 (Upper North Chickamauga Creek).**

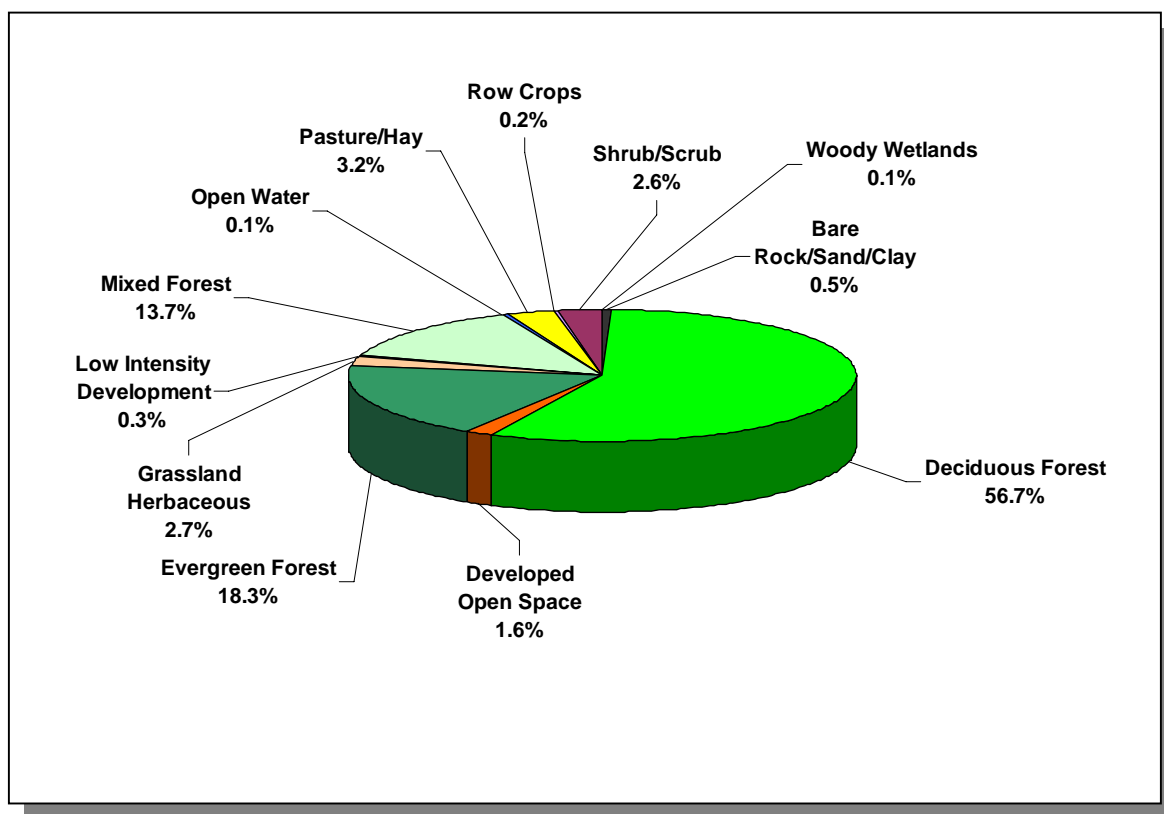


**Figure 4-70. Location of Subwatershed 060200010701.** All Group 4 Lower Tennessee River HUC-12 subwatershed boundaries in Tennessee are shown for reference.

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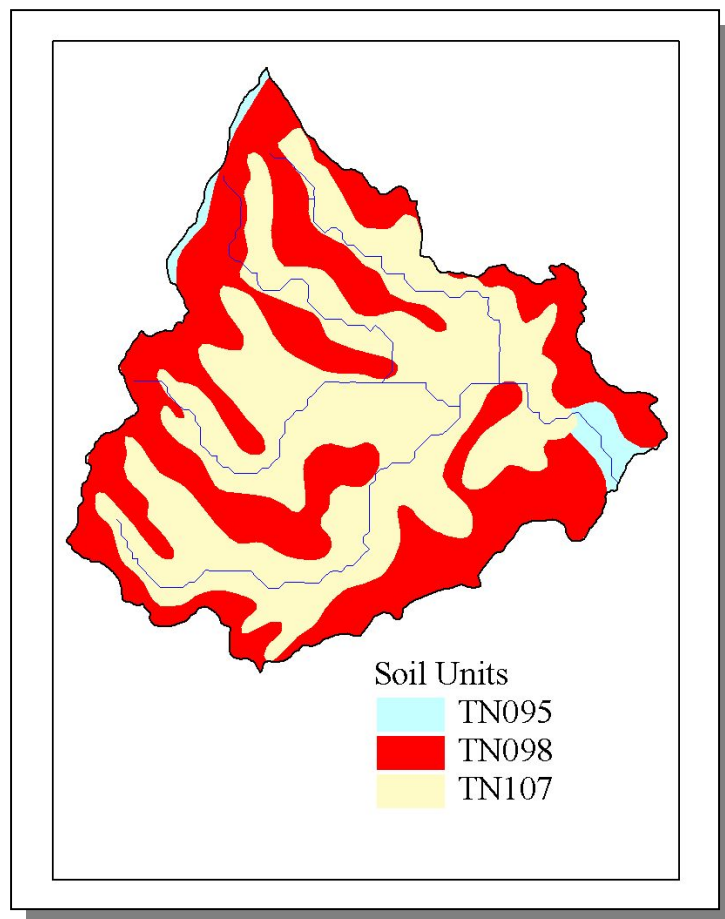
**Figure 4-71. Illustration of Land Use Distribution in Subwatershed 060200010701.**



**Figure 4-72. Land Use Distribution in Subwatershed 060200010701.** More information is provided in Appendix IV.



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**Figure 4-73. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060200010701.**

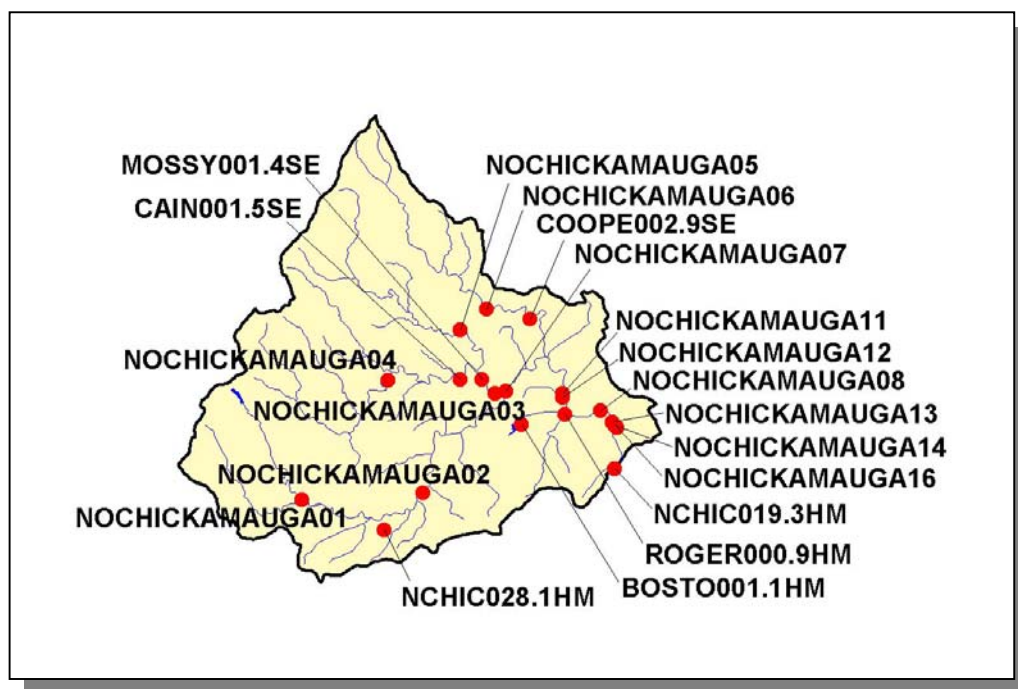
STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN095	0.00	B	2.35	5.12	Loam	0.31
TN098	1.00	C	3.98	4.82	Loam	0.32
TN107	1.00	C	6.34	4.84	Loam	0.28

**Table 4-61. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060200010701.** The definition of "Hydrologic Group" is provided in Appendix IV.

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County	COUNTY POPULATION			Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Hamilton	285,536	294,865	307,896	4.00	11,424	11,797	12,318	7.8
Marion	24,860	26,674	27,776	0.07	17	18	19	11.8
Sequatchie	8,863	10,119	11,370	14.22	1,261	1,439	1,617	28.2
<b>Total</b>	<b>319,259</b>	<b>331,658</b>	<b>347,042</b>		<b>12,702</b>	<b>13,254</b>	<b>13,954</b>	<b>9.9</b>

*Table 4-62. Population Estimates in Subwatershed 060200010701.*



*Figure 4-74. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 060200010701. More information, including site names and locations, and station numbers for sites located in the watershed outside of Tennessee, is provided in Appendix IV.*

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**4.2.B.i.a. Point Source Contributions.**

There are no point sources in this subwatershed.

**4.2.B.i.b. Nonpoint Source Contributions.**

LIVESTOCK COUNTS					
Beef Cow	Cattle	Milk Cow	Chickens (Broilers Sold)	Hogs	Sheep
138	322	13	38,018	7	<5

**Table 4-63. Summary of Livestock Count Estimates in Subwatershed 060200010701.** According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

LIVESTOCK COUNTS							
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Chickens (Broilers Sold)	Hogs	Sheep
Hamilton	6,913	14,734	801	30	934,564	1,017	109
Marion	4,424	8,939	311	246	3,782,097	279	0
Sequatchie	2,763	6,739	221	6	960,000	0	221

**Table 4-64. Summary of Livestock Count Estimates in Hamilton, Marion, and Sequatchie Counties.** According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Hamilton	210.7	210.7	2.2	6.0
Marion				
Sequatchie				

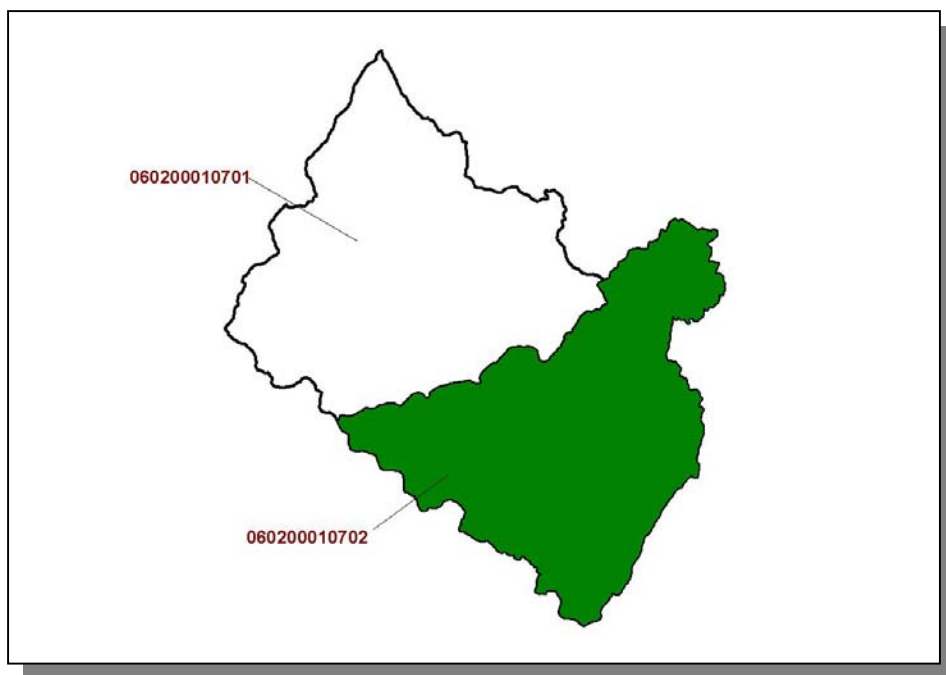
**Table 4-65. Forest Acreage and Annual Removal Rates (1987-1994) in Hamilton, Marion, and Sequatchie Counties.**

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<b>CROPS</b>	<b>TONS/ACRE/YEAR</b>
Legumes (Pastureland)	0.07
Grass (Pastureland)	0.80
Grass (Hayland)	1.19
Legumes, Grass (Hayland)	0.21
Grass, Forbs, Legumes (Mixed Pasture)	0.80
Corn (Row Crops)	3.56
Soybeans (Row Crops)	4.56
Oats (Close Grown Cropland)	3.13
Wheat (Close-Grown Cropland)	3.14
All Other Close-Grown Cropland	1.99
Other (Horticultural)	0.29
Other Vegetable and Truck Crops	7.28
Farmsteads and Ranch Headquarters	0.11

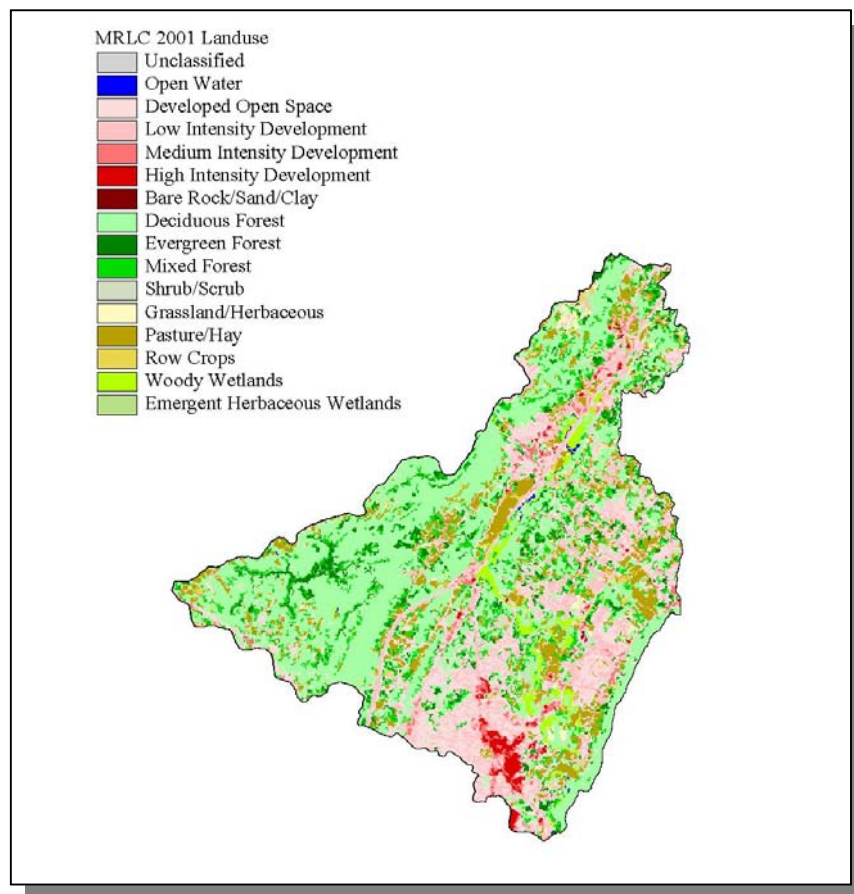
**Table 4-66. Annual Estimated Total Soil Loss in Subwatershed 060200010701.**

**4.2.B.ii. 060200010702 (Lower North Chickamauga Creek).**



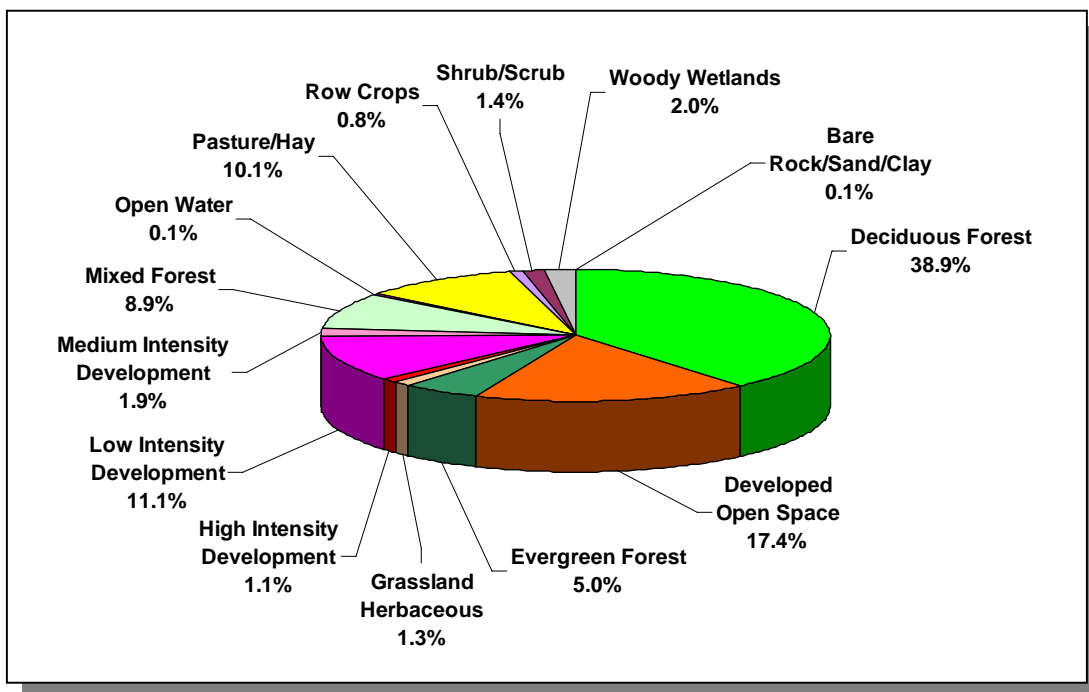
**Figure 4-75. Location of Subwatershed 060200010702.** All Group 4 Lower Tennessee River HUC-12 subwatershed boundaries in Tennessee are shown for reference.

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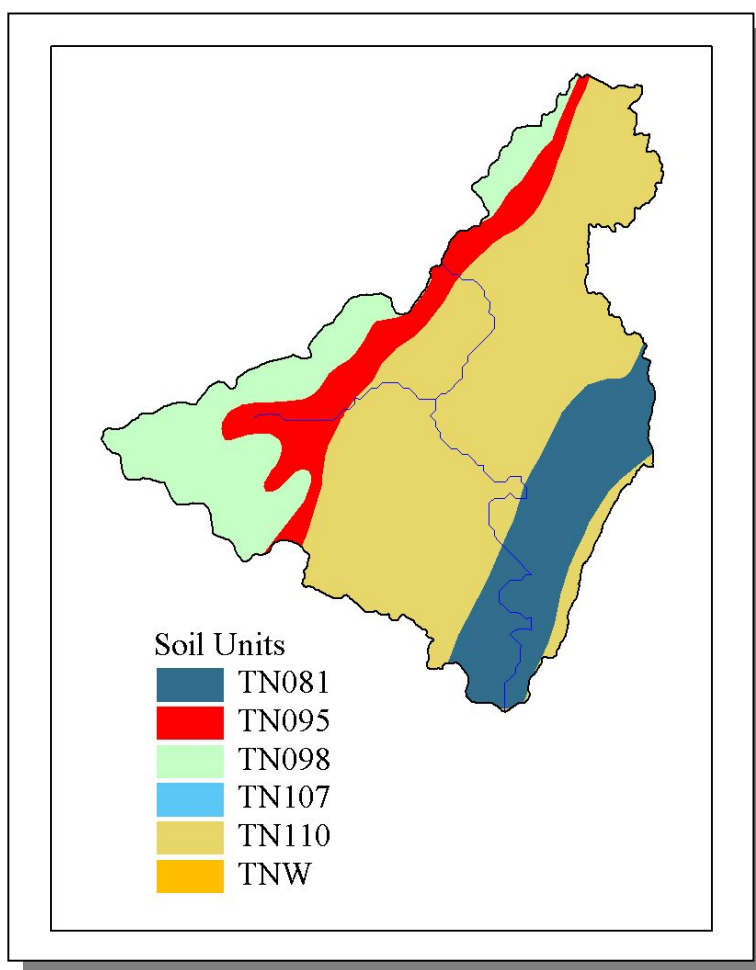
**Figure 4-76. Illustration of Land Use Distribution in Subwatershed 060200010702.**

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**Figure 4-77. Land Use Distribution in Subwatershed 060200010702.** More information is provided in Appendix IV.

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**Figure 4-78. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060200010702.**

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN081	5.00	C	1.41	5.48	Silty Loam	0.35
TN095	0.00	B	2.35	5.12	Loam	0.31
TN098	1.00	C	3.98	4.82	Loam	0.32
TN107	1.00	C	6.34	4.84	Loam	0.28
TN110	0.00	B	2.22	4.96	Loam	0.31

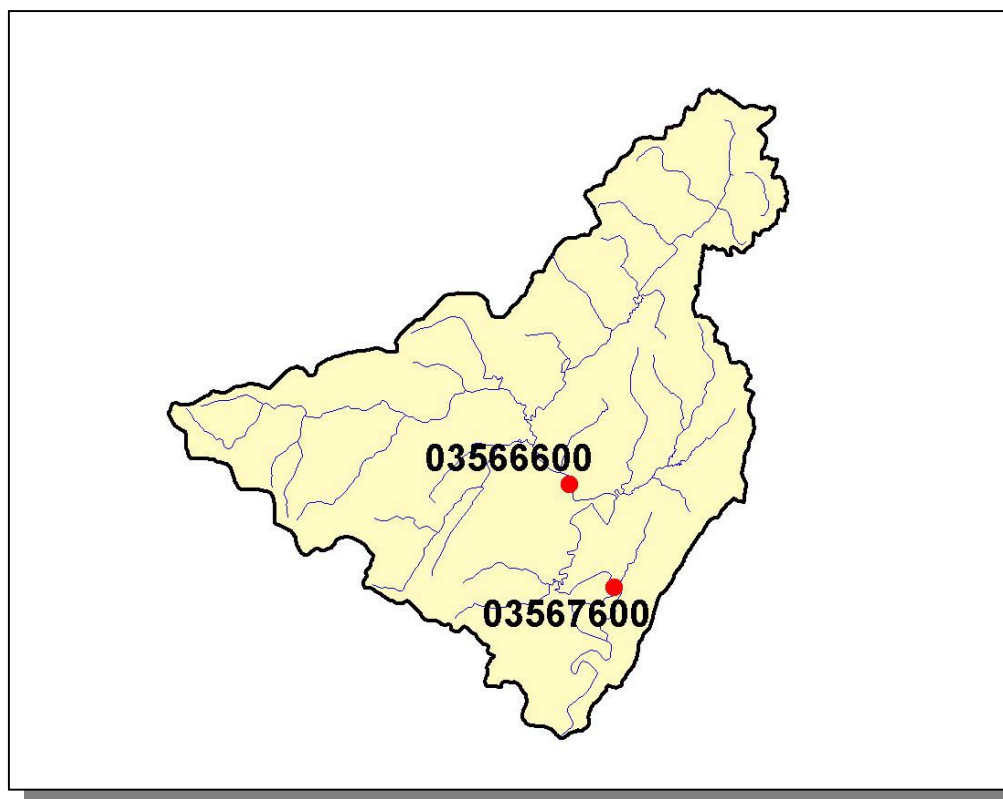
**Table 4-67. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060200010702.** The definition of "Hydrologic Group" is provided in Appendix IV.



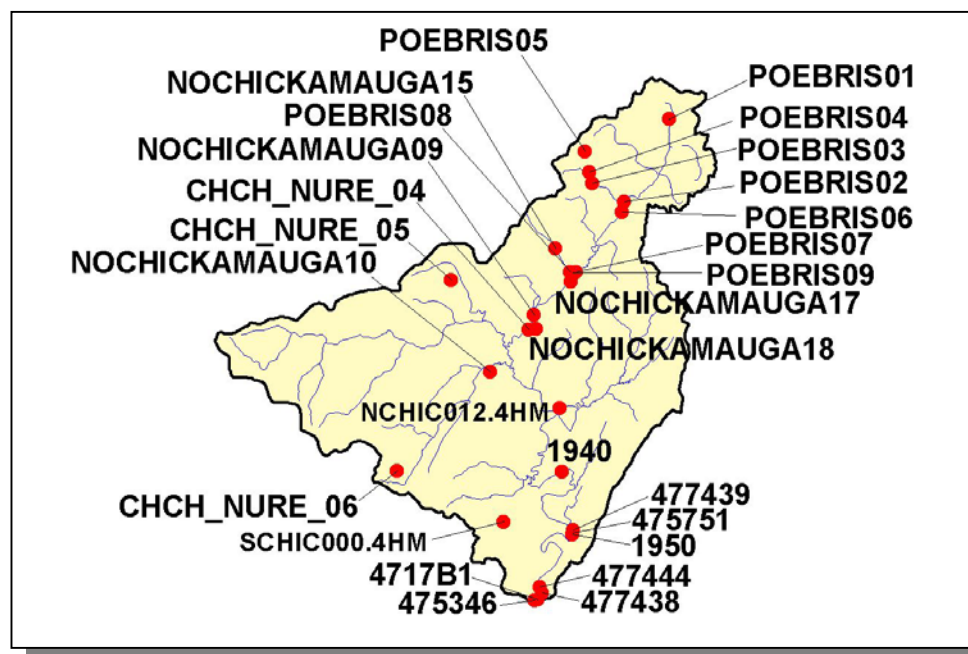
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County	COUNTY POPULATION			Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Hamilton	285,536	294,865	307,896	9.81	28,003	28,918	30,196	7.8

**Table 4-68. Population Estimates in Subwatershed 060200010702.**

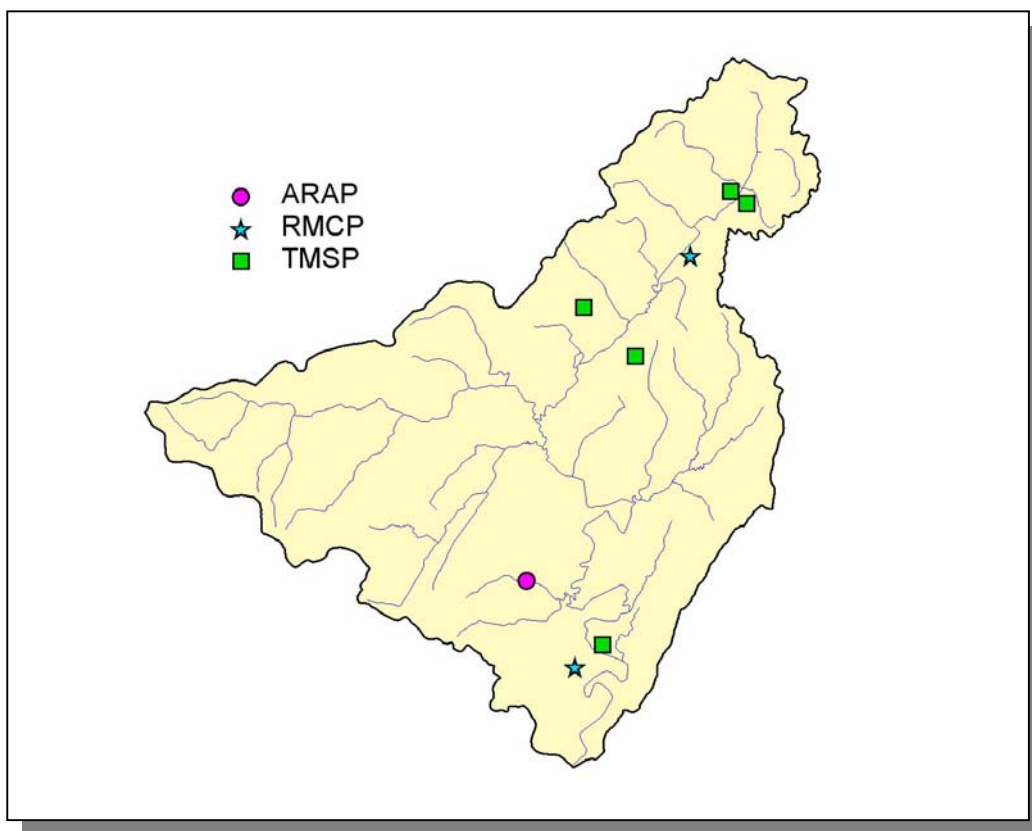


**Figure 4-79. Location of Historical Streamflow Data Collection Sites in Subwatershed 060200010702.** More information is provided in Appendix IV.

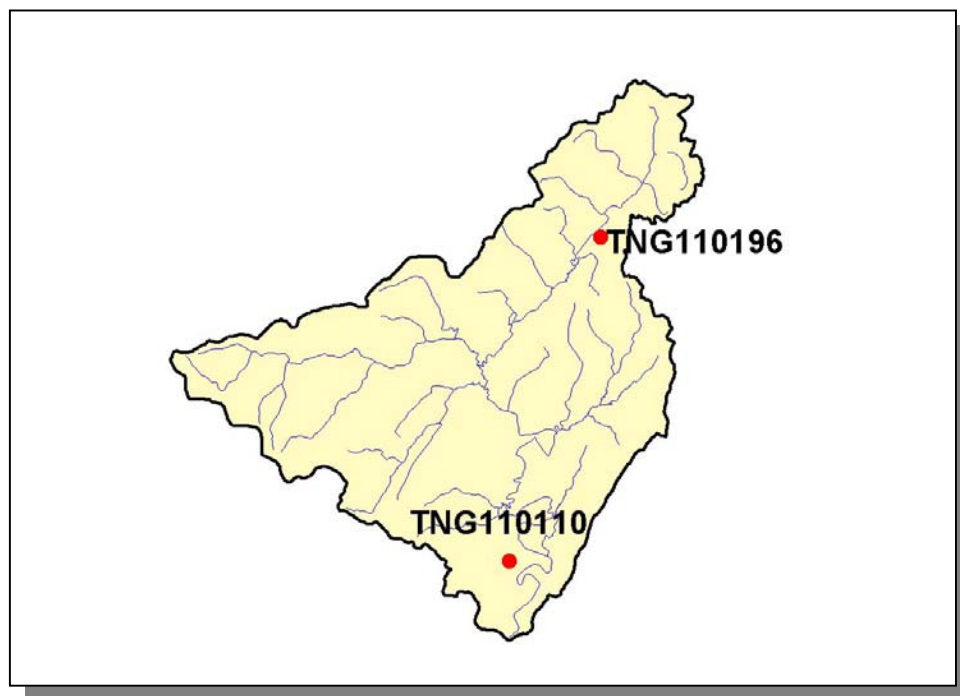


**Figure 4-80. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 060200010702.** More information, including site names and locations, and station numbers for sites located in the watershed outside of Tennessee, is provided in Appendix IV.

**4.2.B.ii.a. Point Source Contributions.**



**Figure 4-81. Location of Permits Issued in Subwatershed 060200010702.** More information, including the names of facilities, is provided in Appendix IV.

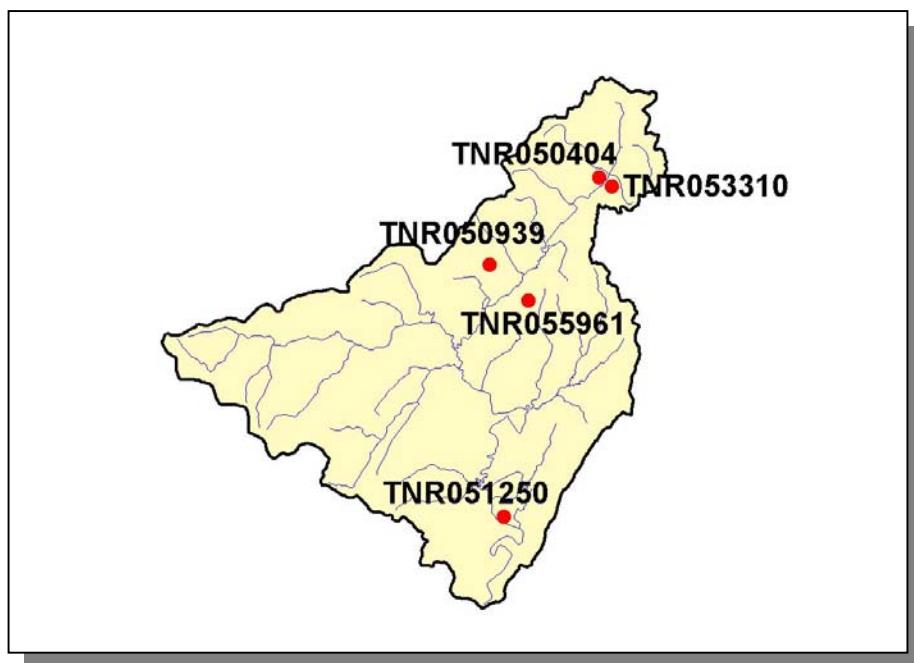


**Figure 4-82. Location of Ready Mix Concrete Plants (RMCP) in Subwatershed 060200010702.** More information is provided in Appendix IV.



**Figure 4-83. Location of Aquatic Resource Alteration Permit (ARAP) Sites (Individual Permits) in Subwatershed 060200010702.** More information is provided in Appendix IV.

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**Figure 4-84. Location of TMSP Sites in Subwatershed 060200010702.** More information, including the names of facilities, is provided in Appendix IV.

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**4.2.B.ii.b. Nonpoint Source Contributions.**

<b>LIVESTOCK (COUNTS)</b>						
Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Chickens (Broilers Sold)	Hogs	Sheep
576	1,227	67	<5	77,850	85	9

**Table 4-69. Summary of Livestock Count Estimates in Subwatershed 060200010702.** According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.

<b>LIVESTOCK COUNTS</b>							
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Chickens (Broilers Sold)	Hogs	Sheep
Hamilton	6,913	14,734	801	30	934,564	1,017	109

**Table 4-70. Summary of Livestock Count Estimates in Hamilton County.** According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.

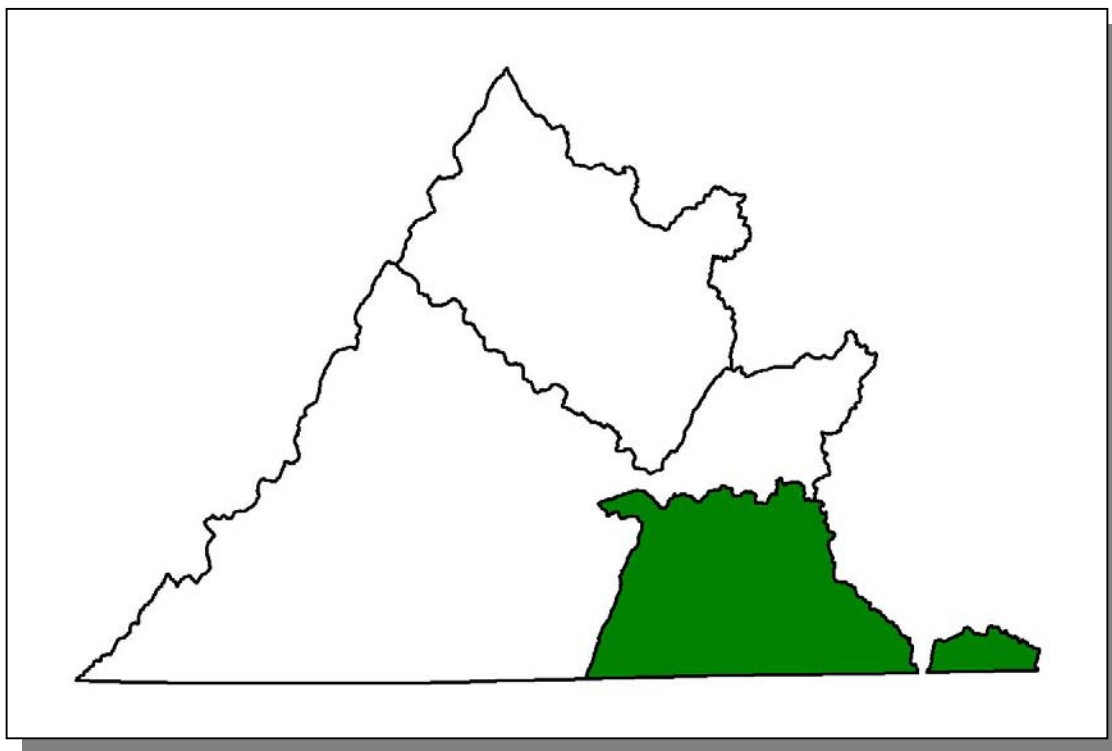
County	<b>INVENTORY</b>		<b>REMOVAL RATE</b>	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Hamilton	210.7	210.7	2.2	6.0

**Table 4-71. Forest Acreage and Annual Removal Rates (1987-1994) in Hamilton County.**

<b>CROPS</b>	<b>TONS/ACRE/YEAR</b>
Grass (Pastureland)	0.34
Grass (Hayland)	2.33
Legumes, Grass (Hayland)	0.20
Legumes (Pastureland)	0.07
Grass, Forbs, Legumes (Mixed Pasture)	0.27
Corn (Row Crops)	5.28
Oats (Close-Grown Cropland)	3.13
Wheat (Close-Grown Cropland)	3.14
All Other Close-Grown Cropland	1.99
Farmsteads and Ranch Headquarters	0.10

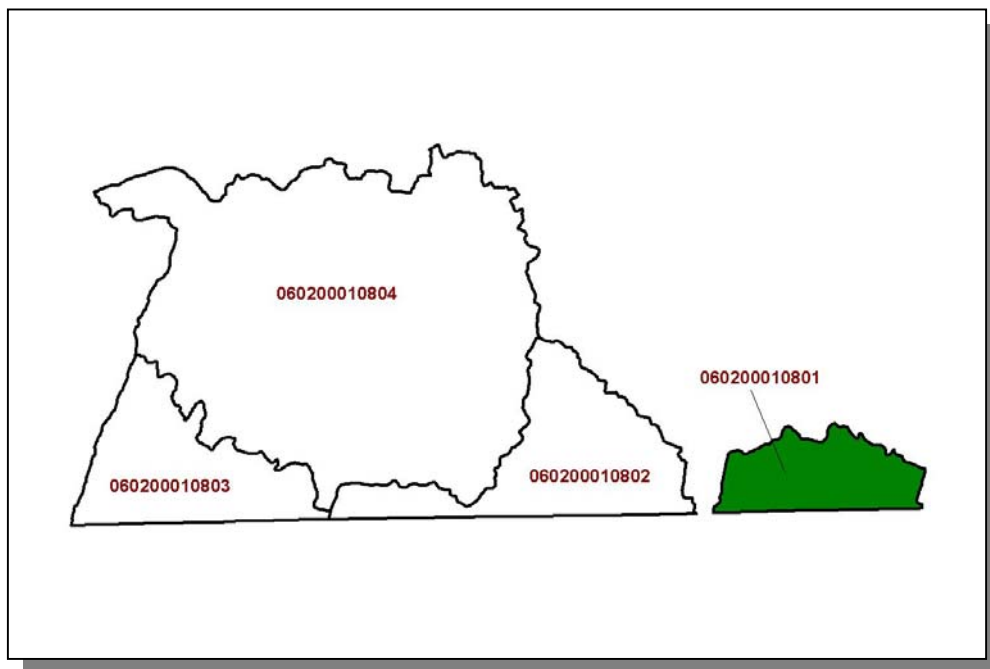
**Table 4-72. Annual Estimated Total Soil Loss in Subwatershed 060200010702.**

**4.2.C. 0602000108**



**Figure 4-85. Location of Subwatershed 0602000108.** All Group 4 Lower Tennessee River HUC-10 subwatershed boundaries in Tennessee are shown for reference.

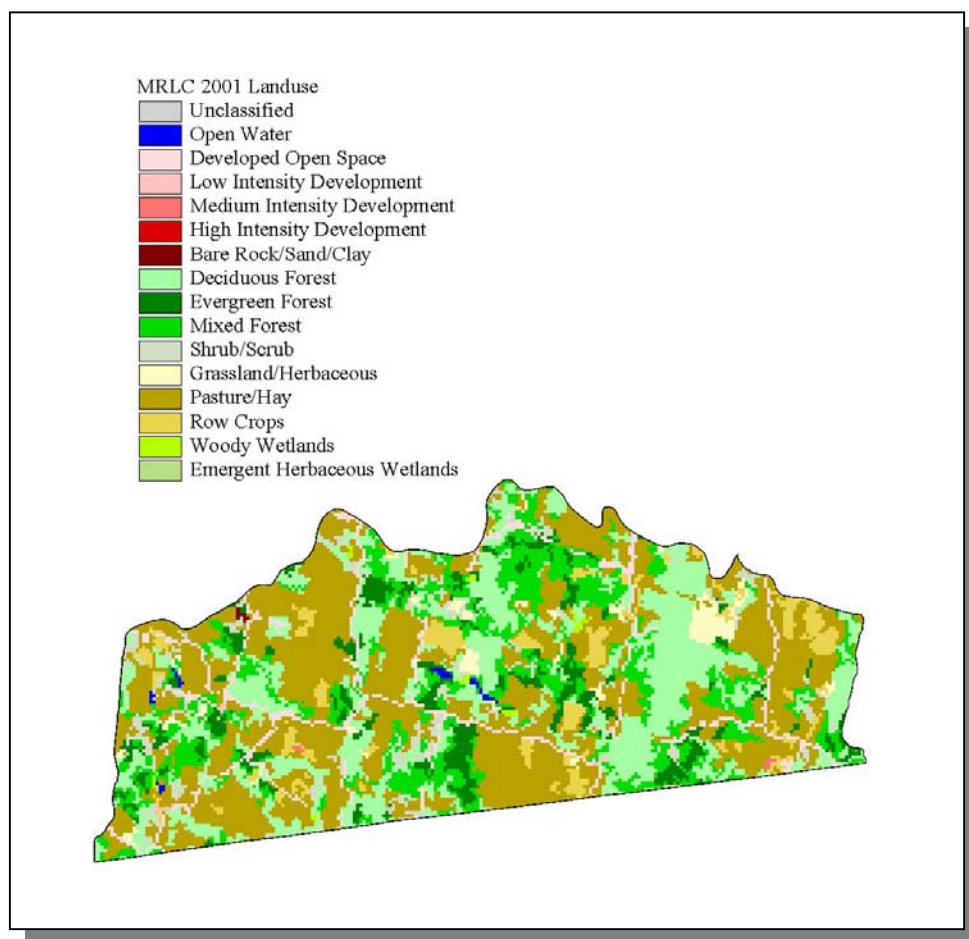
**4.2.C.i. 060200010801 (East Chickamauga Creek).**



**Figure 4-86. Location of Subwatershed 060200010801.** All Group 4 Lower Tennessee River HUC-12 subwatershed boundaries in Tennessee are shown for reference.

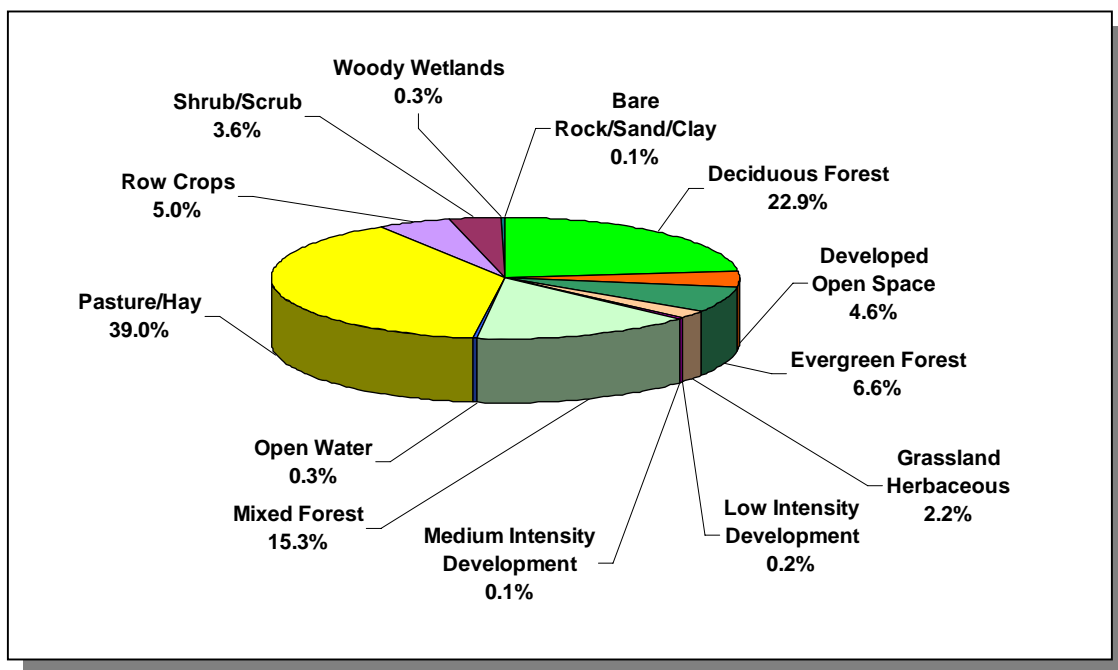


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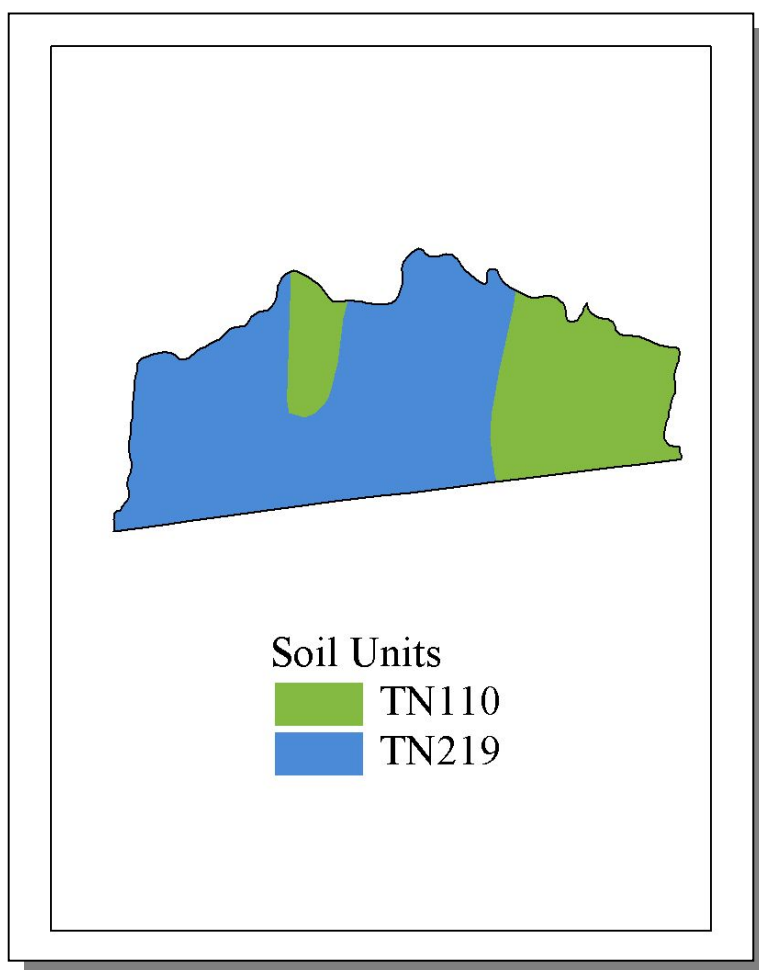
*Figure 4-87. Illustration of Land Use Distribution in Subwatershed 060200010801.*

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**Figure 4-88. Land Use Distribution in Subwatershed 060200010801.** More information is provided in Appendix IV.

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**Figure 4-89. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060200010801.**

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN110	0.00	B	2.22	4.96	Loam	0.31
TN219	0.00	C	1.35	4.95	Loam	0.33

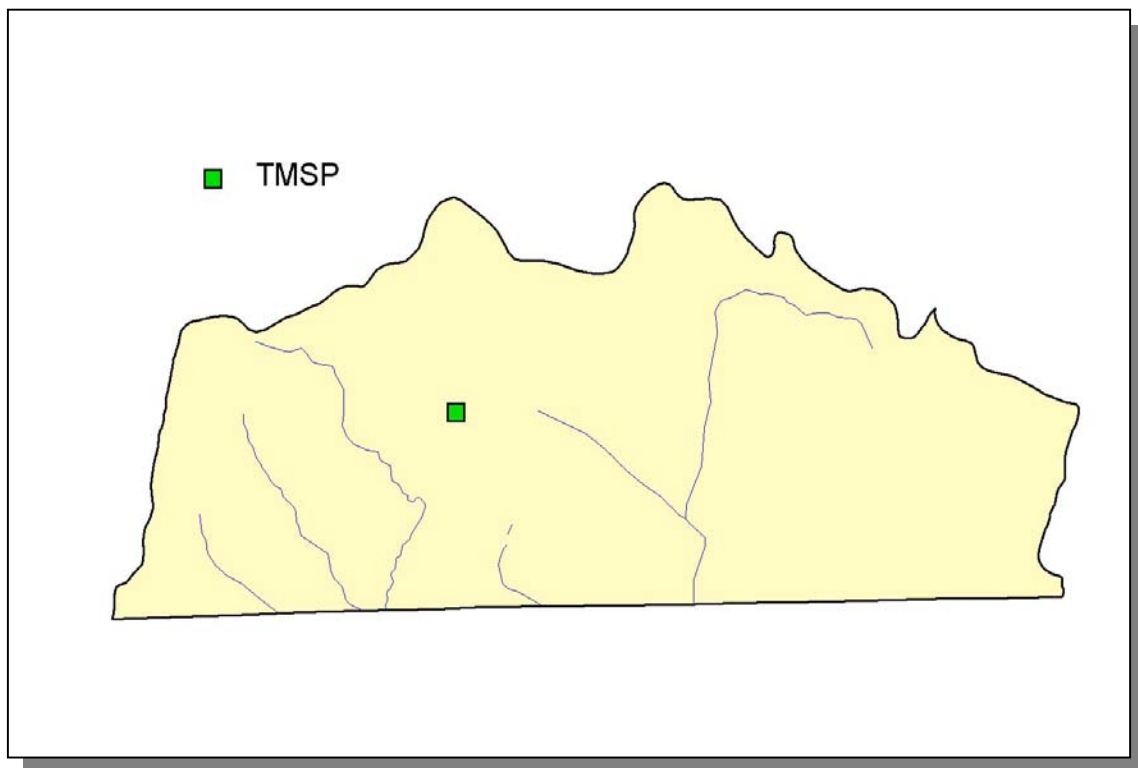
**Table 4-73. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060200010801.** The definition of "Hydrologic Group" is provided in Appendix IV.

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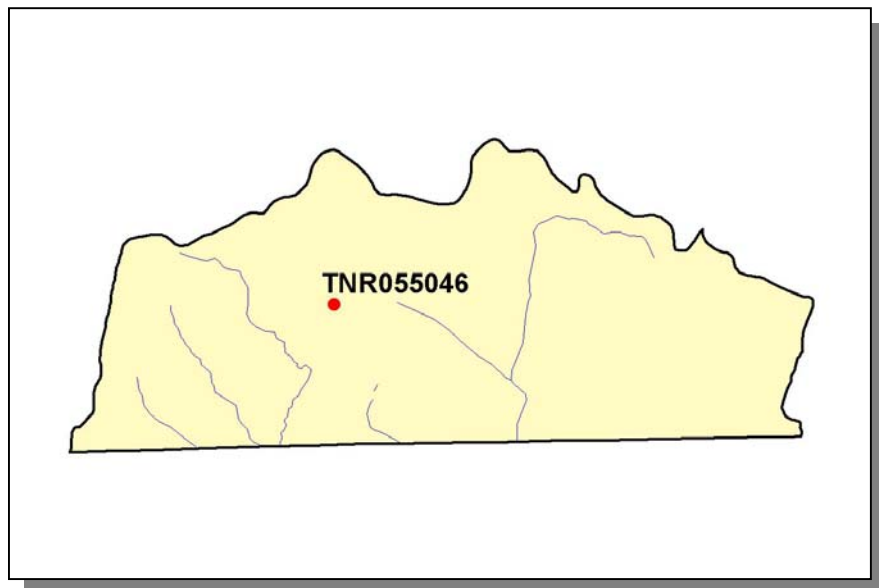
County	COUNTY POPULATION			Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Bradley	73,712	80,800	87,965	0.23	170	187	203	19.4
Hamilton	285,536	294,865	307,896	0.67	1,912	1,975	2,062	7.8
<b>Total</b>	<b>359,248</b>	<b>375,665</b>	<b>395,861</b>		<b>2,082</b>	<b>2,162</b>	<b>2,265</b>	<b>8.8</b>

*Table 4-74. Population Estimates in Subwatershed 060200010801.*

**4.2.C.i.a. Point Source Contributions.**



**Figure 4-90. Location of Permits Issued in Subwatershed 060200010801.** More information, including the names of facilities, is provided in Appendix IV.



**Figure 4-91. Location of TMSF Sites in Subwatershed 060200010801.** More information, including the names of facilities, is provided in Appendix IV.

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**4.2.C.i.b. Nonpoint Source Contributions.**

<b>LIVESTOCK (COUNTS)</b>						
Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Chickens (Broilers Sold)	Hogs	Sheep
207	471	35	<5	248,802	25	<5

**Table 4-75. Summary of Livestock Count Estimates in Subwatershed 060200010801.**  
According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.

<b>LIVESTOCK COUNTS</b>							
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Chickens (Broilers Sold)	Hogs	Sheep
Bradley	10,876	30,454	3,856	265,577	21,279,814	253	129
Hamilton	6,913	14,734	801	30	934,564	1,017	109

**Table 4-76. Summary of Livestock Count Estimates in Bradley and Hamilton Counties.**  
According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.

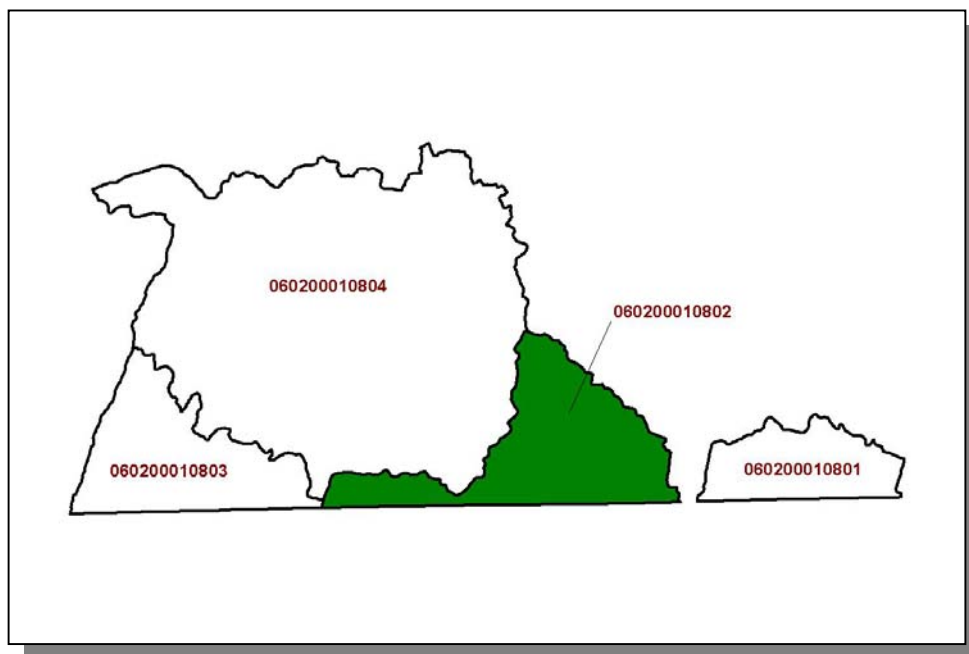
County	<b>INVENTORY</b>		<b>REMOVAL RATE</b>	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Bradley	92.5	92.5	8.2	18.1
Hamilton	210.7	210.7	2.2	6.0

**Table 4-77. Forest Acreage and Annual Removal Rates (1987-1994) in Bradley and Hamilton Counties.**

<b>CROPS</b>	<b>TONS/ACRE/YEAR</b>
Legumes (Pastureland)	0.07
Grass (Pastureland)	0.32
Grass (Hayland)	1.54
Legumes, Grass (Hayland)	0.19
Grass, Forbs, Legumes (Mixed Pasture)	0.38
Corn (Row Crops)	5.28
Soybeans (Row Crops)	7.38
Oats (Close-Grown Cropland)	3.13
Wheat (Close-Grown Cropland)	3.14
All Other Close-Grown Cropland	1.99
Other Cropland not Planted	0.48
Conservation Reserve Program Lands	0.27
Other Land in Farms	0.60
Farmsteads and Ranch Headquarters	0.46

**Table 4-78. Annual Estimated Total Soil Loss in Subwatershed 060200010801.**

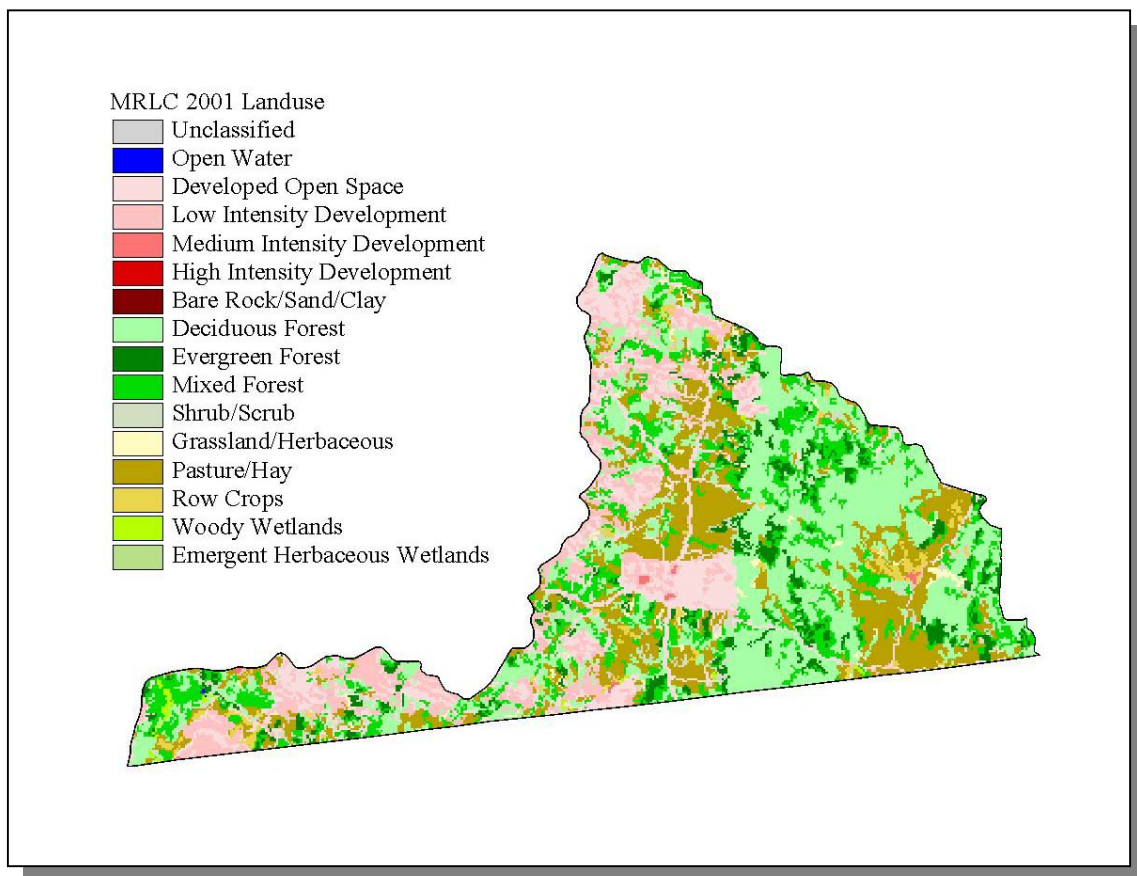
**4.2.C.ii.** 060200010802 (Little Chickamauga Creek).



**Figure 4-92. Location of Subwatershed 060200010802.** All Group 4 Lower Tennessee River HUC-12 subwatershed boundaries in Tennessee are shown for reference.

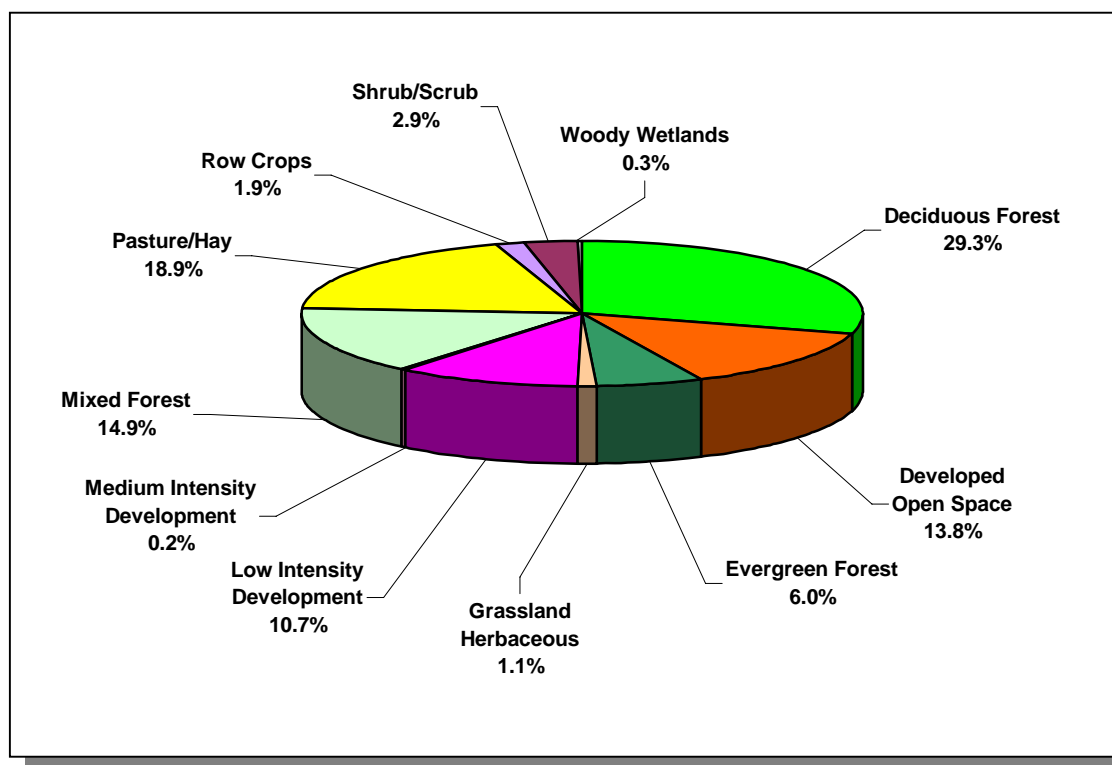


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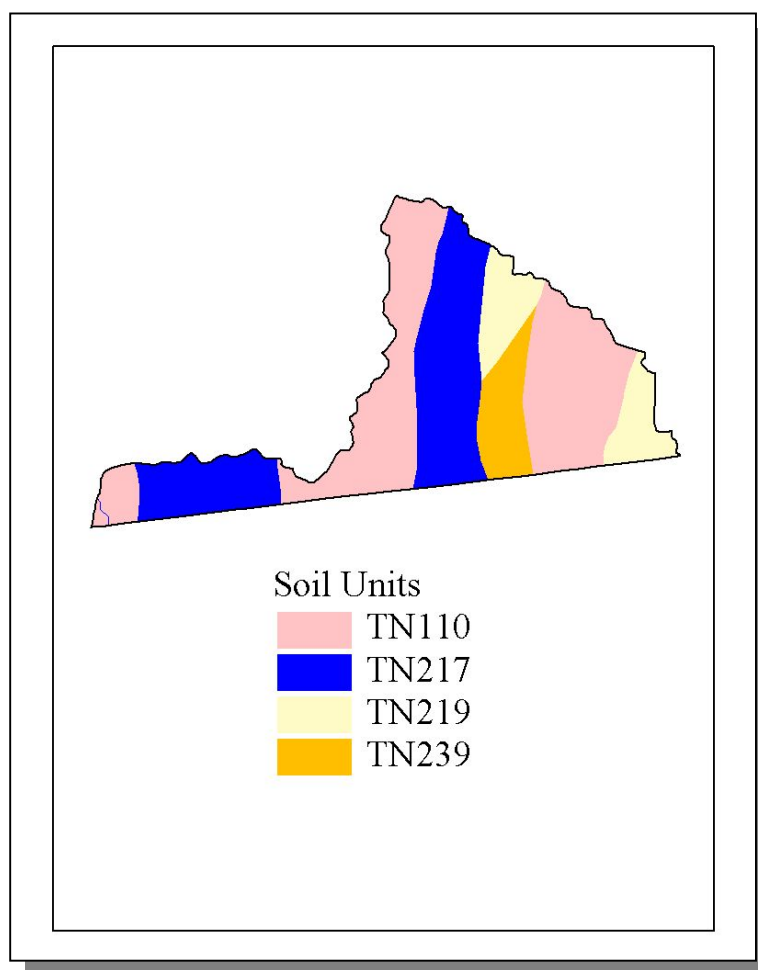
**Figure 4-93. Illustration of Land Use Distribution in Subwatershed 060200010802.**

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**Figure 4-94. Land Use Distribution in Subwatershed 060200010802.** More information is provided in Appendix IV.

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**Figure 4-95. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060200010802.**

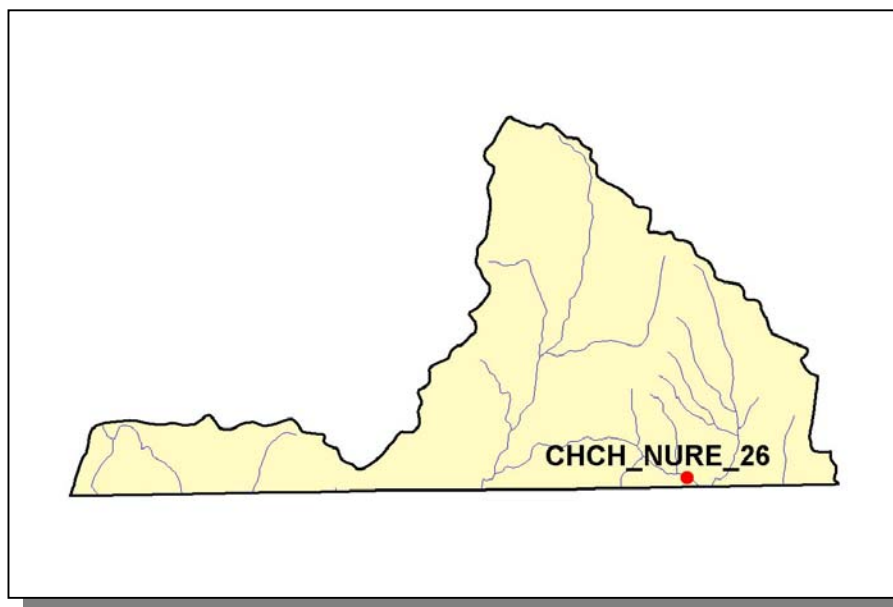
STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN110	0.00	B	2.22	4.96	Loam	0.31
TN217	0.00	C	2.34	5.32	Loam	0.35
TN219	0.00	C	1.35	4.95	Loam	0.33
TN239	2.00	C	2.94	4.86	Loam	0.22

**Table 4-79. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060200010802.** The definition of "Hydrologic Group" is provided in Appendix IV.

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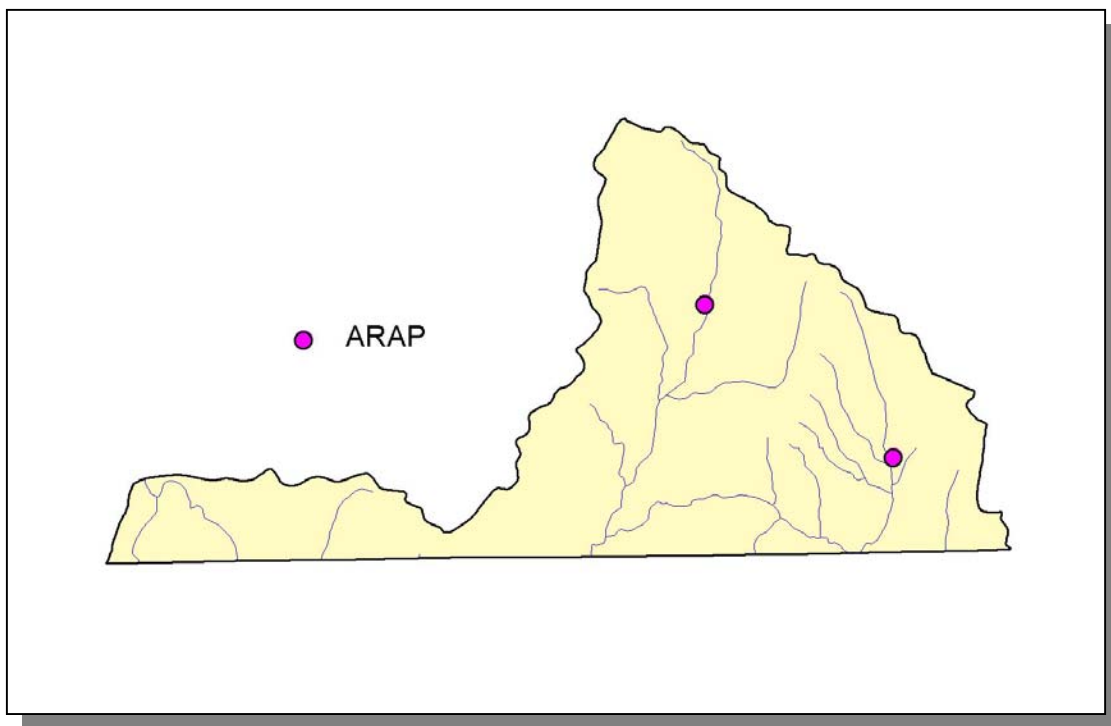
County	COUNTY POPULATION			Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Hamilton	285,536	294,865	307,896	1.73	4,945	5,106	5,332	7.8

**Table 4-80. Population Estimates in Subwatershed 060200010802.**



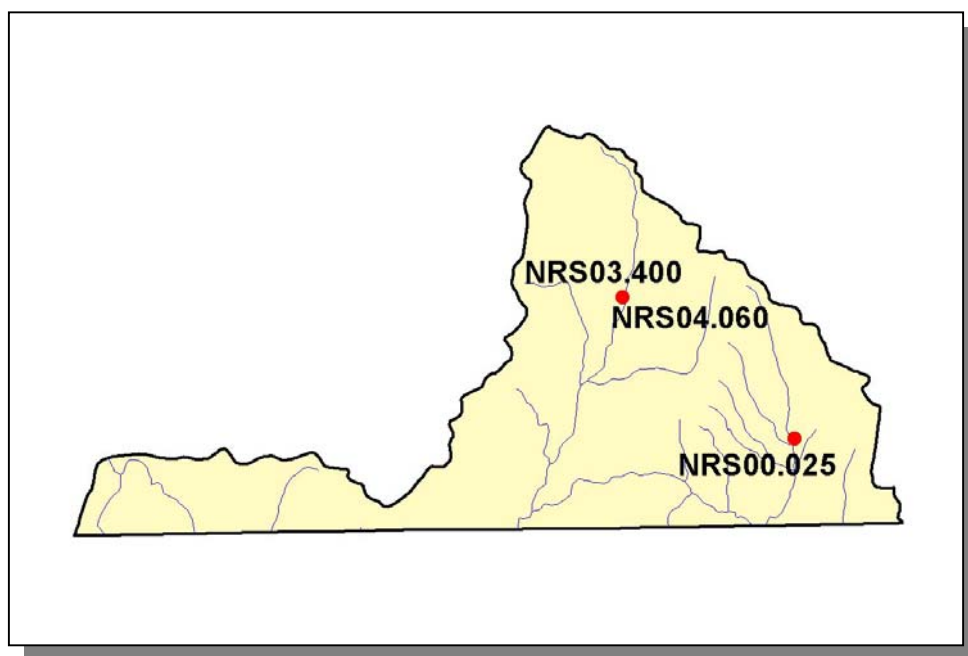
**Figure 4-96. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 060200010802.** More information, including site names and locations, and station numbers for sites located in the watershed outside of Tennessee, is provided in Appendix IV.

**4.2.C.ii.a. Point Source Contributions.**



**Figure 4-97. Location of Permits Issued in Subwatershed 060200010802.** More information, including the names of facilities, is provided in Appendix IV.

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**Figure 4-98. Location of Aquatic Resource Alteration Permit (ARAP) Sites (Individual Permits) in Subwatershed 060200010802. More information is provided in Appendix IV.**

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**4.2.C.ii.b. Nonpoint Source Contributions.**

<b>LIVESTOCK (COUNTS)</b>						
Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Chickens (Broilers Sold)	Hogs	Sheep
238	507	28	<5	165,598	35	<5

**Table 4-81. Summary of Livestock Count Estimates in Subwatershed 060200010802.** According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.

<b>LIVESTOCK COUNTS</b>							
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Chickens (Broilers Sold)	Hogs	Sheep
Hamilton	6,913	14,734	801	30	934,564	1,017	109

**Table 4-82. Summary of Livestock Count Estimates in Hamilton County.** According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.

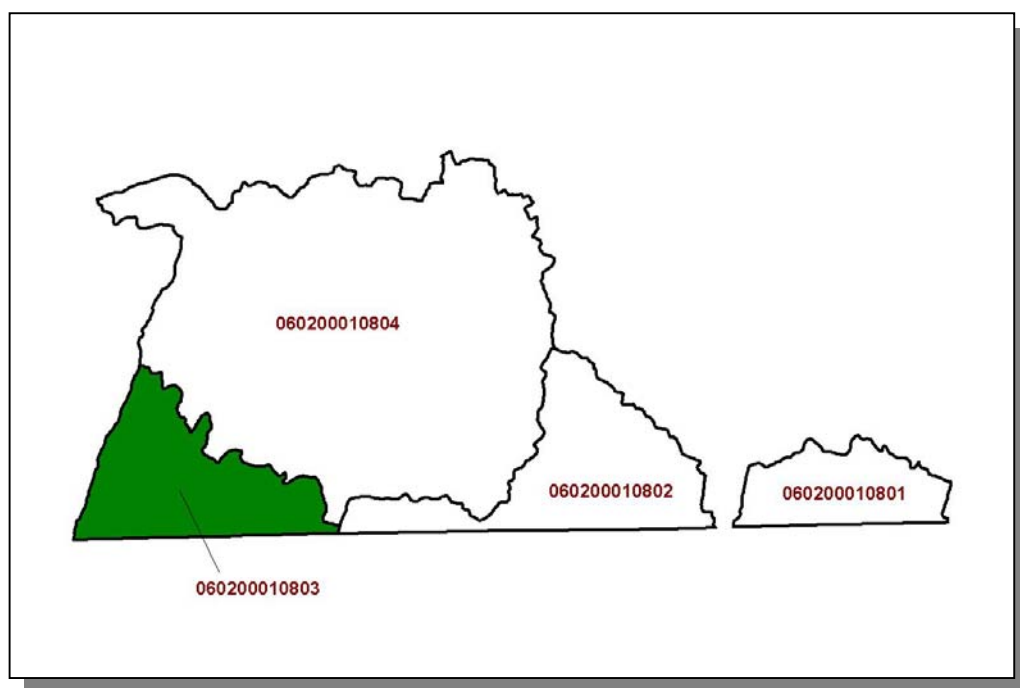
County	<b>INVENTORY</b>		<b>REMOVAL RATE</b>	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Hamilton	210.7	210.7	2.2	6.0

**Table 4-83. Forest Acreage and Annual Removal Rates (1987-1994) in Hamilton County.**

<b>CROPS</b>	<b>TONS/ACRE/YEAR</b>
Legumes (Pastureland)	0.07
Grass (Pastureland)	0.32
Grass (Hayland)	1.88
Legumes, Grass (Hayland)	0.20
Grass, Forbs, Legumes (Mixed Pasture)	0.27
Corn (Row Crops)	5.28
Soybeans (Row Crops)	7.48
Oats (Close-Grown Cropland)	3.13
Wheat (Close-Grown Cropland)	3.14
All Other Close-Grown Cropland	1.99
Other Cropland not Planted	0.48
Other Land in Farms	0.30
Farmsteads and Ranch Headquarters	0.31

**Table 4-84. Annual Estimated Total Soil Loss in Subwatershed 060200010802.**

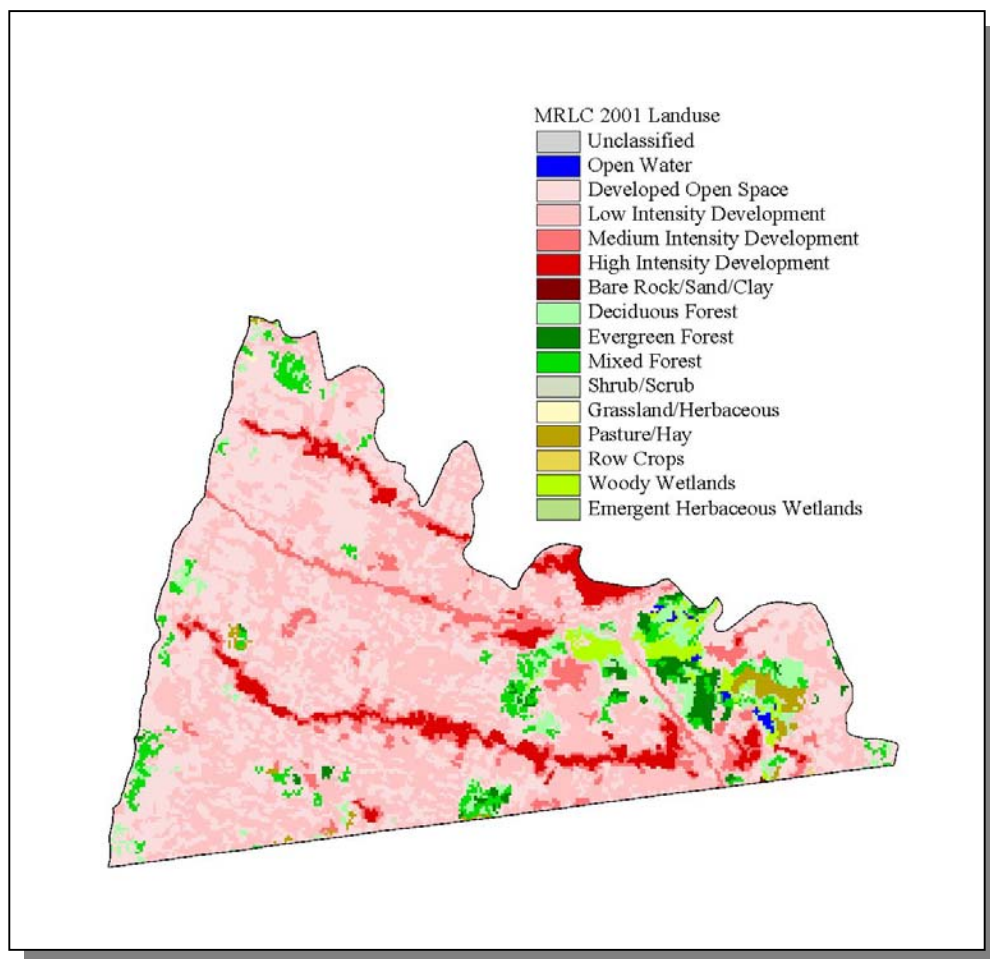
**4.2.C.iii. 060200010803 (West Chickamauga Creek).**



**Figure 4-99. Location of Subwatershed 060200010803.** All Group 4 Lower Tennessee River HUC-12 subwatershed boundaries in Tennessee are shown for reference.

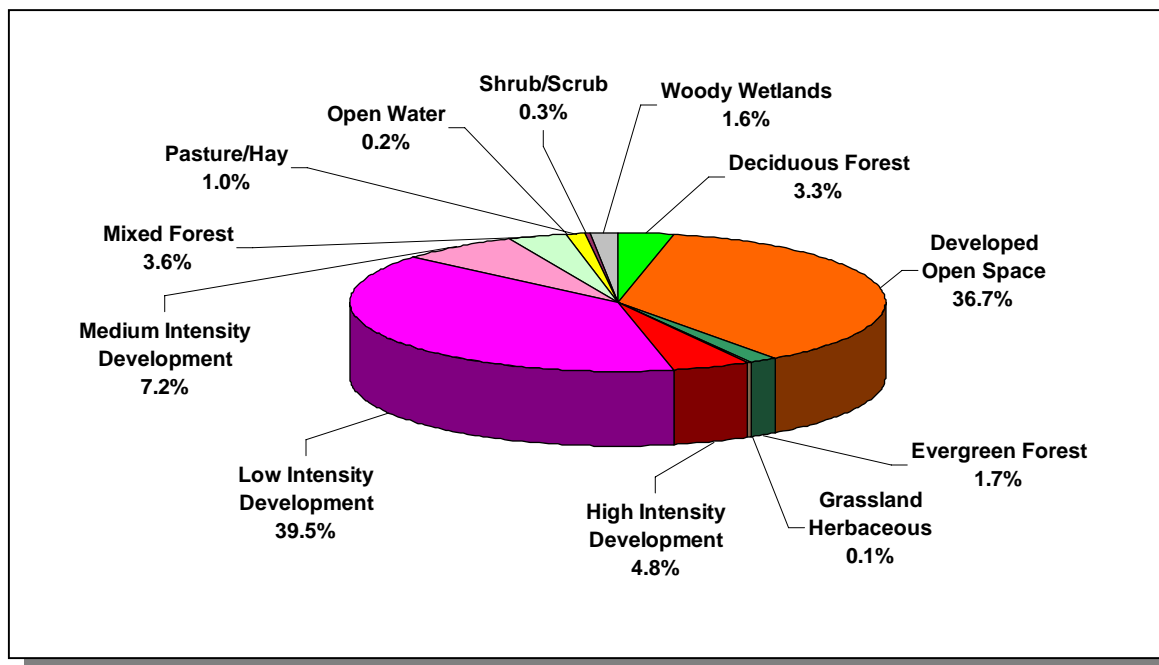


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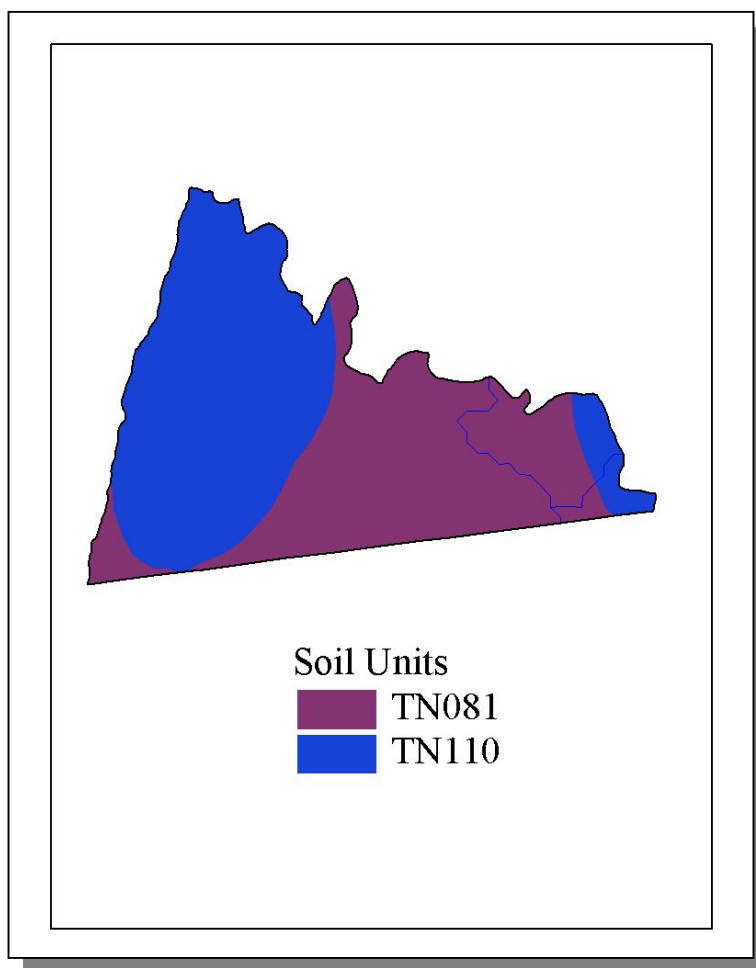
*Figure 4-100. Illustration of Land Use Distribution in Subwatershed 060200010803.*

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**Figure 4-101. Land Use Distribution in Subwatershed 060200010803.** More information is provided in Appendix IV.

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**Figure 4-102. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060200010803.**

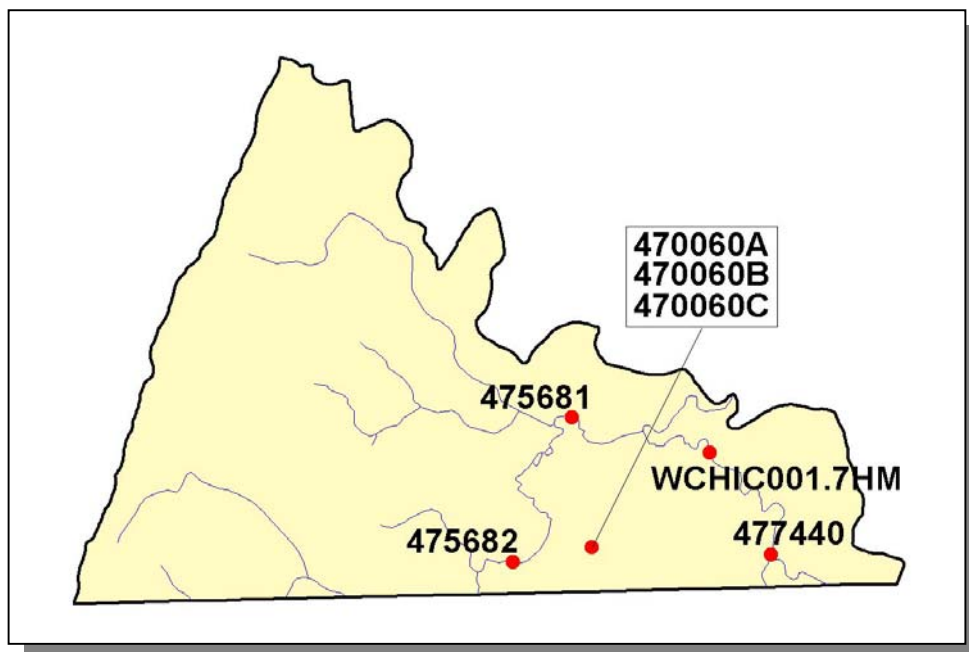
STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN081	5.00	C	1.41	5.48	Silty Loam	0.35
TN110	0.00	B	2.22	4.96	Loam	0.31

**Table 4-85. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060200010803.** The definition of "Hydrologic Group" is provided in Appendix IV.

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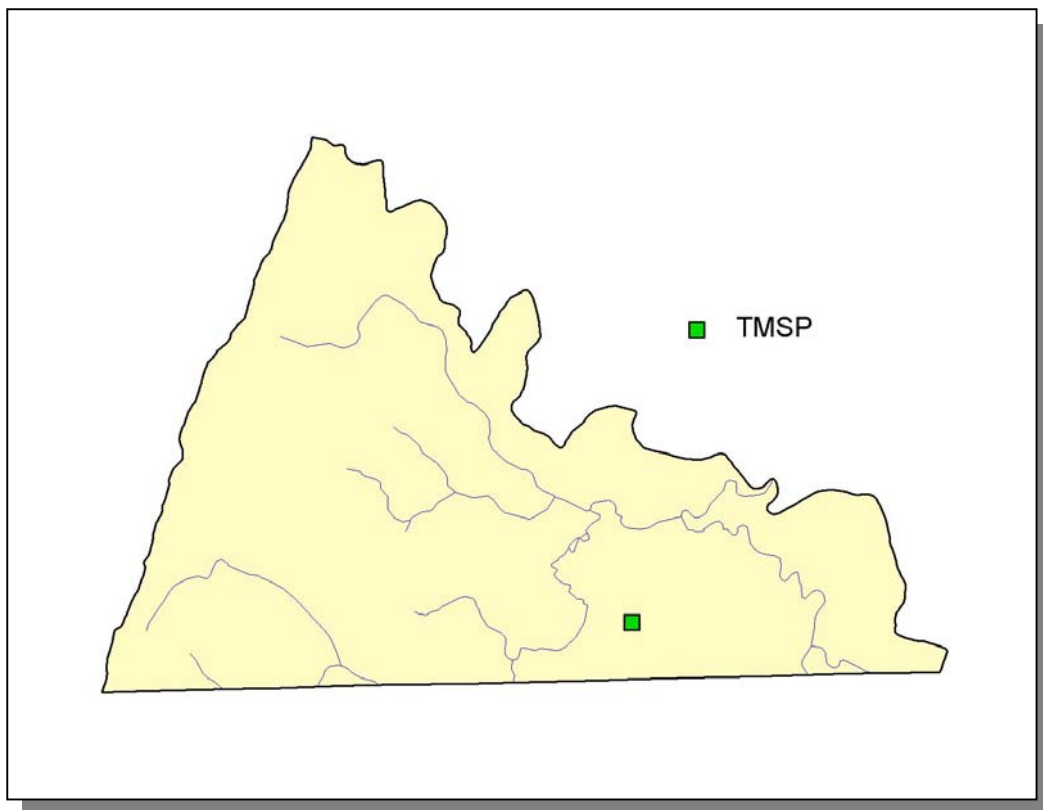
County	COUNTY POPULATION			Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Hamilton	285,536	294,865	307,896	1.53	4,360	4,503	4,701	7.8

**Table 4-86. Population Estimates in Subwatershed 060200010803.**

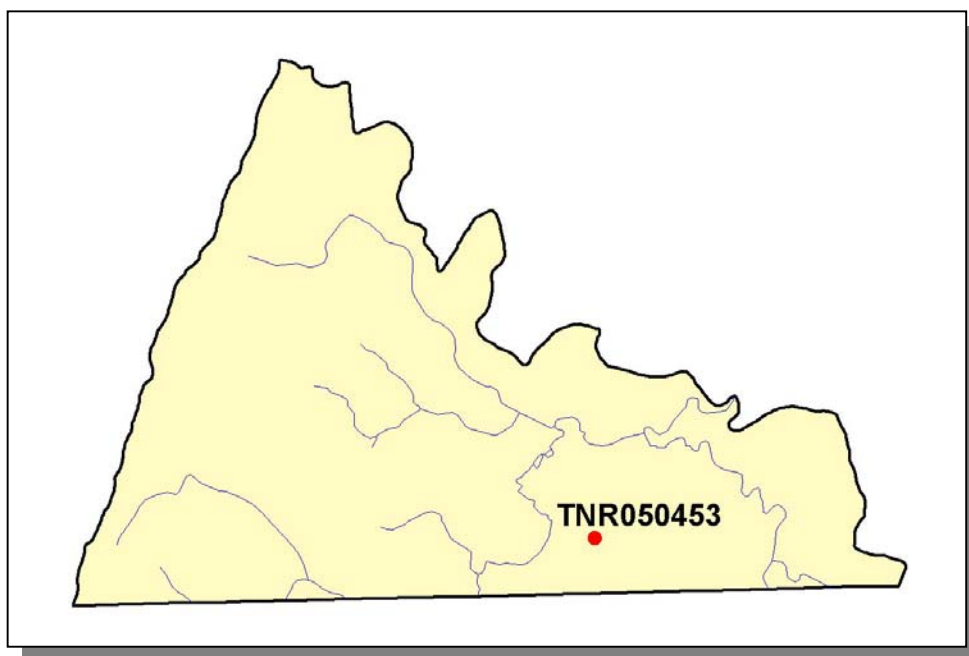


**Figure 4-103. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 060200010803.** More information, including site names and locations, and station numbers for sites located in the watershed outside of Tennessee, is provided in Appendix IV.

**4.2.C.iii.a. Point Source Contributions.**



**Figure 4-104. Location of Permits Issued in Subwatershed 060200010803.** More information, including the names of facilities, is provided in Appendix IV.



**Figure 4-105. Location of TMSP Sites in Subwatershed 060200010803.** More information, including the names of facilities, is provided in Appendix IV.

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**4.2.C.iii.b. Nonpoint Source Contributions.**

LIVESTOCK COUNTS				
Beef Cow	Cattle	Milk Cow	Chickens (Broilers Sold)	Hogs
27	59	<5	6,782	<5

**Table 4-87. Summary of Livestock Count Estimates in Subwatershed 060200010803.** According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.

LIVESTOCK COUNTS							
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Chickens (Broilers Sold)	Hogs	Sheep
Hamilton	6,913	14,734	801	30	934,564	1,017	109

**Table 4-88. Summary of Livestock Count Estimates in Hamilton County.** According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.

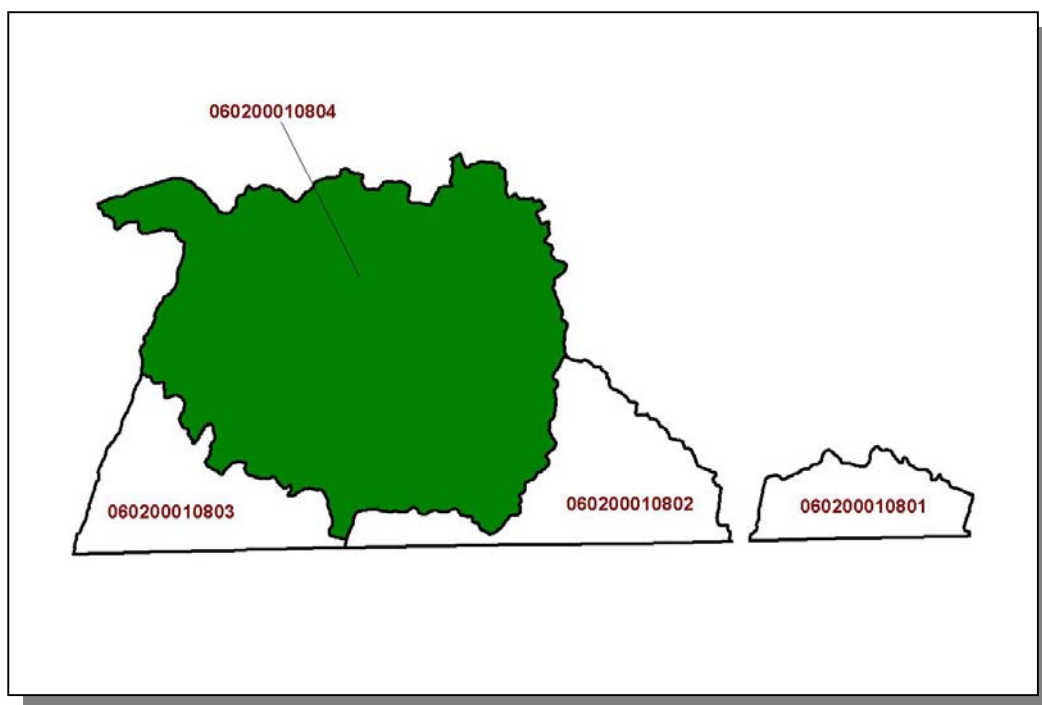
County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Hamilton	210.7	210.7	2.2	6.0

**Table 4-89. Forest Acreage and Annual Removal Rates (1987-1994) in Hamilton County.**

CROPS	TONS/ACRE/YEAR
Legumes (Pastureland)	0.07
Grass (Pastureland)	0.32
Grass (Hayland)	1.99
Legumes, Grass (Hayland)	0.20
Grass, Forbs, Legumes (Mixed Pasture)	0.27
Corn (Row Crops)	5.28
Soybeans (Row Crops)	7.64
Oats (Close-Grown Cropland)	3.13
Wheat (Close-Grown Cropland)	3.14
All Other Close-Grown Cropland	1.99
Other Cropland not Planted	0.48
Other Land in Farms	0.21
Farmsteads and Ranch Headquarters	0.27

**Table 4-90. Annual Estimated Total Soil Loss in Subwatershed 060200010803.**

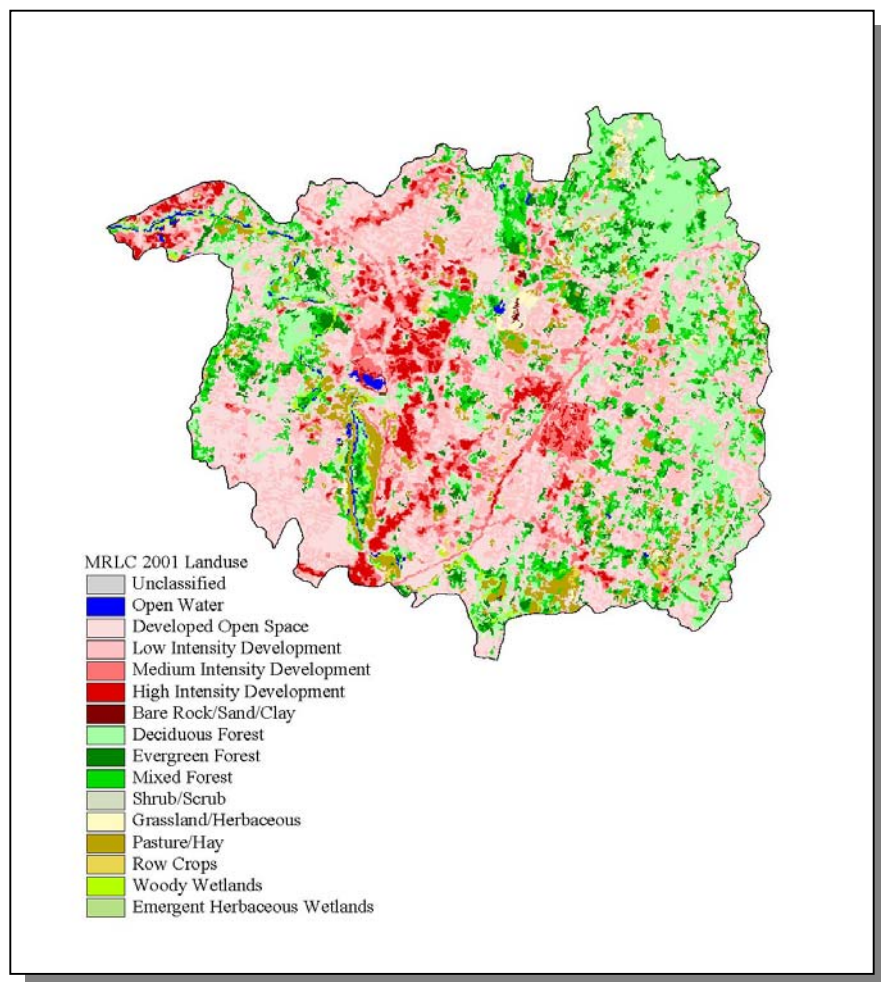
**4.2.C.iv. 060200010804 (South Chickamauga Creek).**



**Figure 4-106. Location of Subwatershed 060200010804.** All Group 4 Lower Tennessee River HUC-12 subwatershed boundaries in Tennessee are shown for reference.

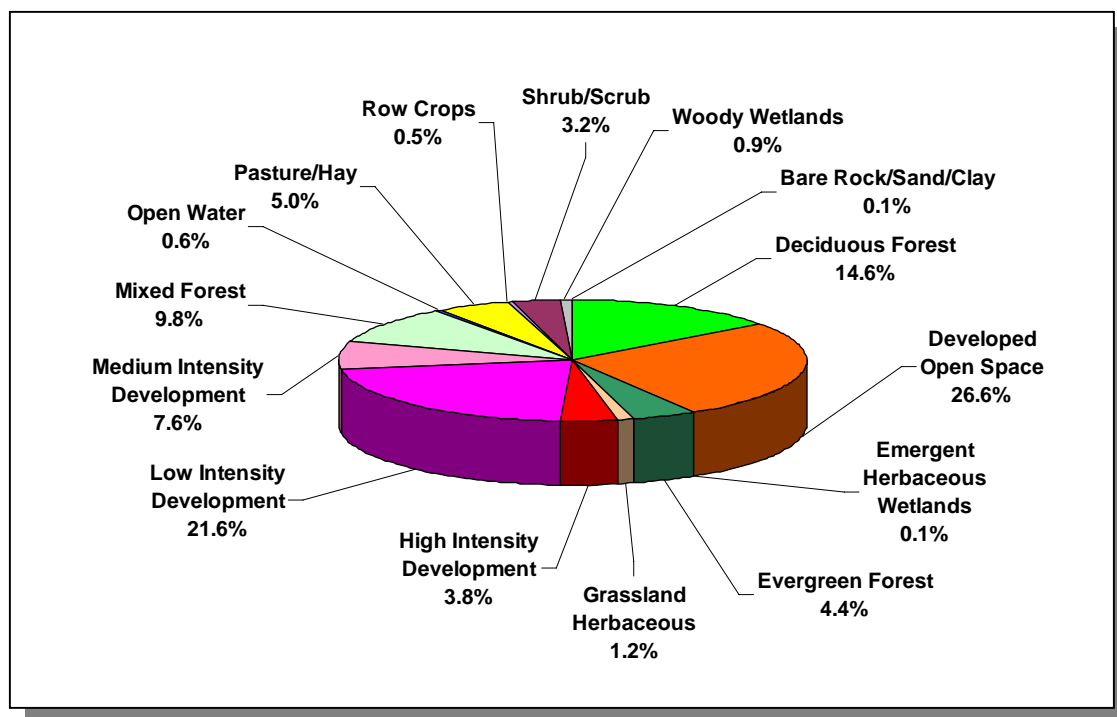


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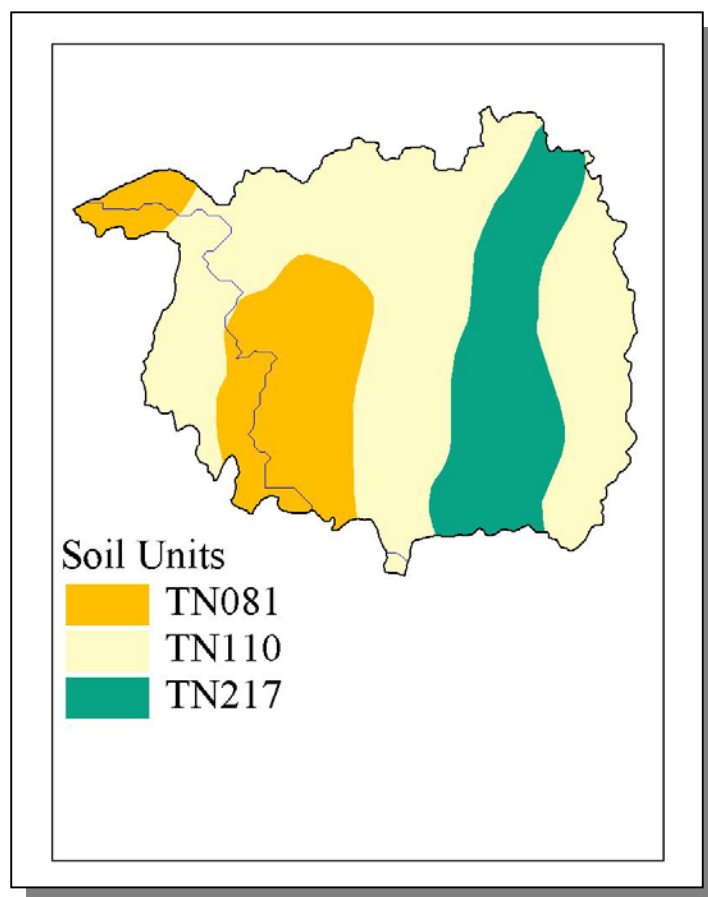
**Figure 4-107. Illustration of Land Use Distribution in Subwatershed 060200010804.**

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**Figure 4-108. Land Use Distribution in Subwatershed 060200010804.** More information is provided in Appendix IV.

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**Figure 4-109. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060200010804.**

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN081	5.00	C	1.41	5.48	Silty Loam	0.35
TN110	0.00	B	2.22	4.96	Loam	0.31
TN217	0.00	C	2.34	5.32	Loam	0.35

**Table 4-91. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060200010804.** The definition of "Hydrologic Group" is provided in Appendix IV.

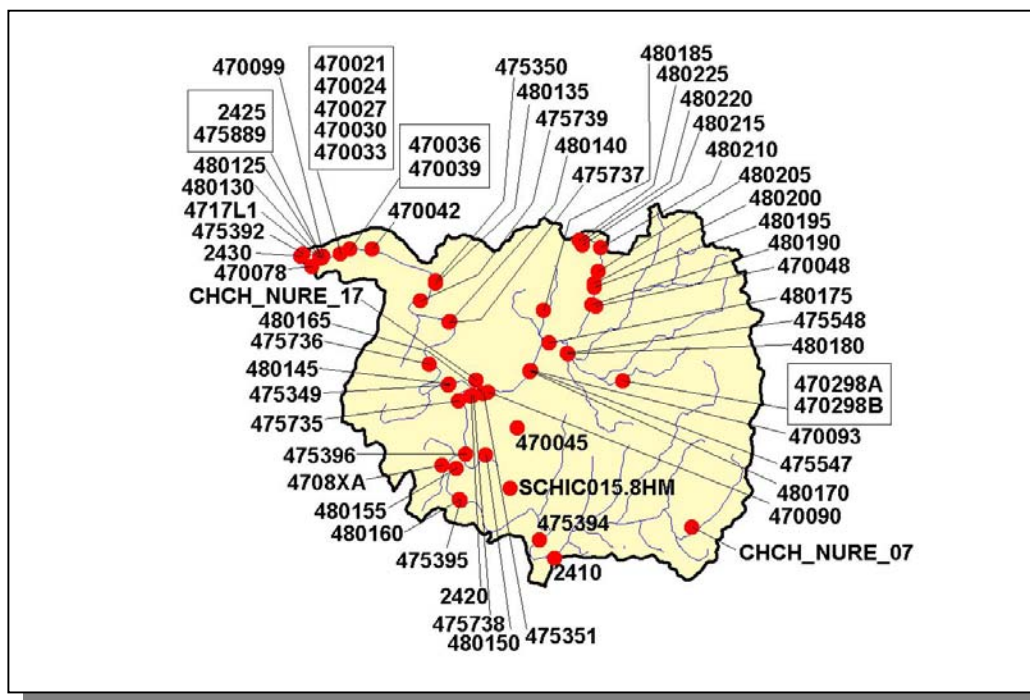
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County	COUNTY POPULATION			Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Hamilton	285,536	294,865	307,896	8.68	24,784	25,594	26,725	7.8

*Table 4-92. Population Estimates in Subwatershed 060200010804.*

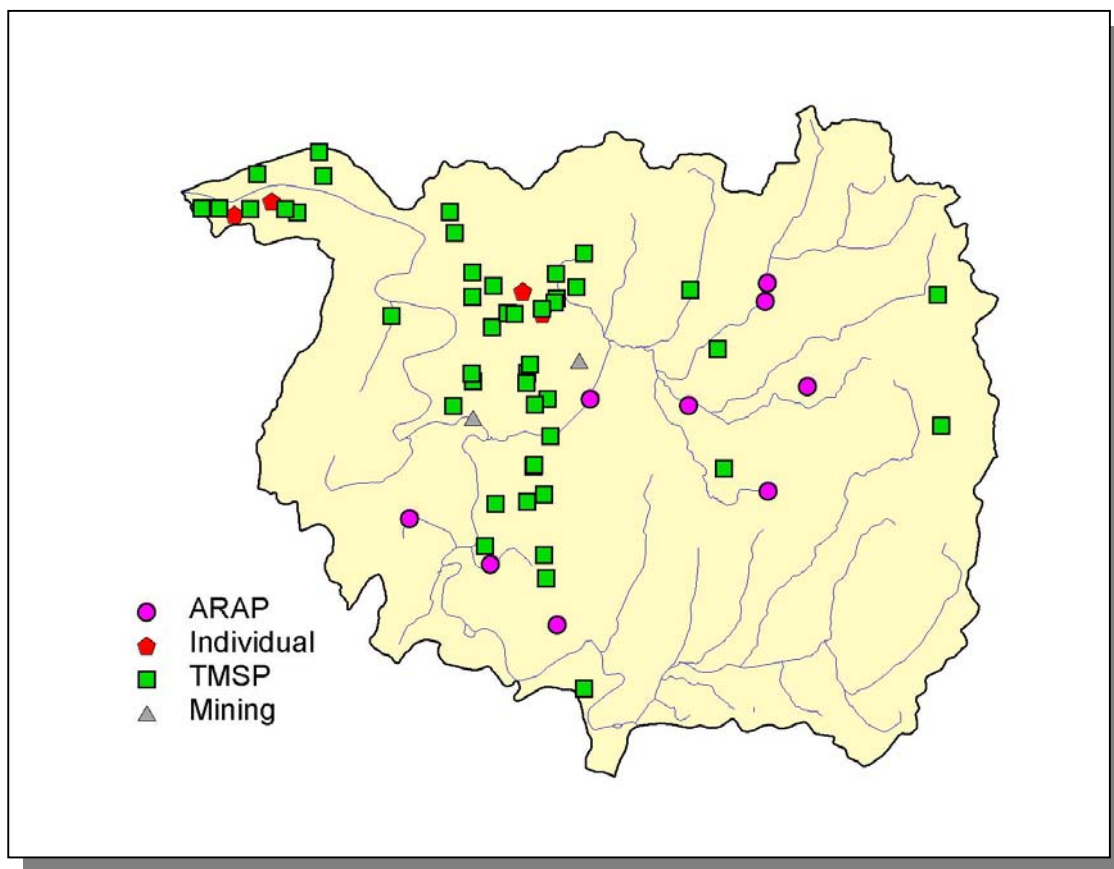


**Figure 4-110. Location of Historical Streamflow Data Collection Sites in Subwatershed 060200010804.** More information is provided in Appendix IV.

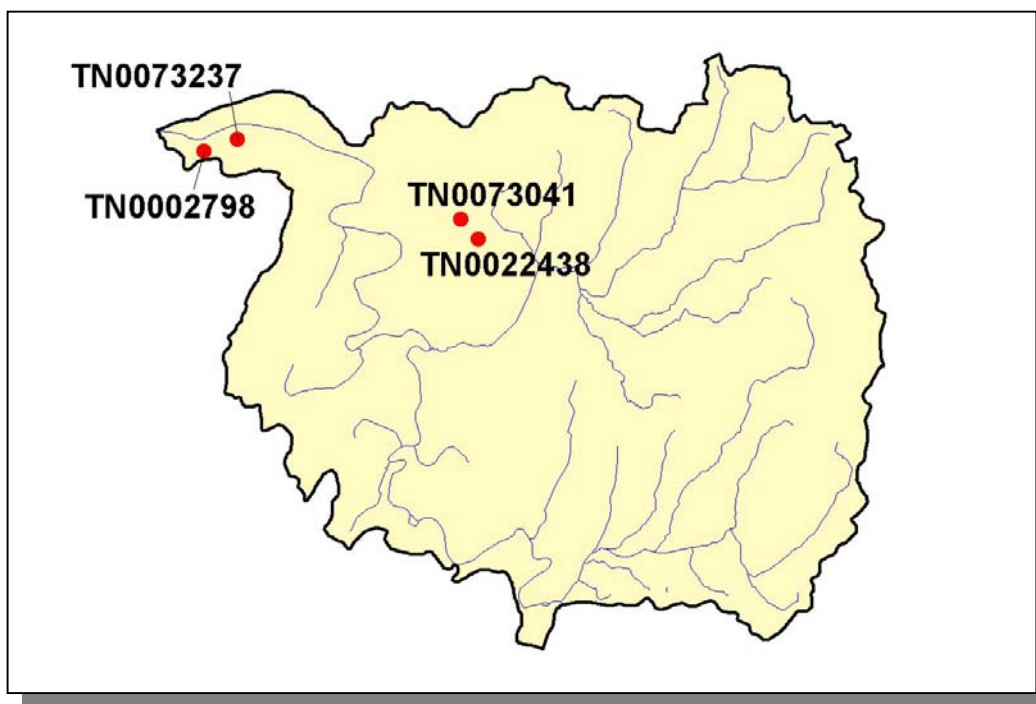


**Figure 4-111. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 060200010804.** More information, including site names and locations, and station numbers for sites located in the watershed outside of Tennessee, is provided in Appendix IV.

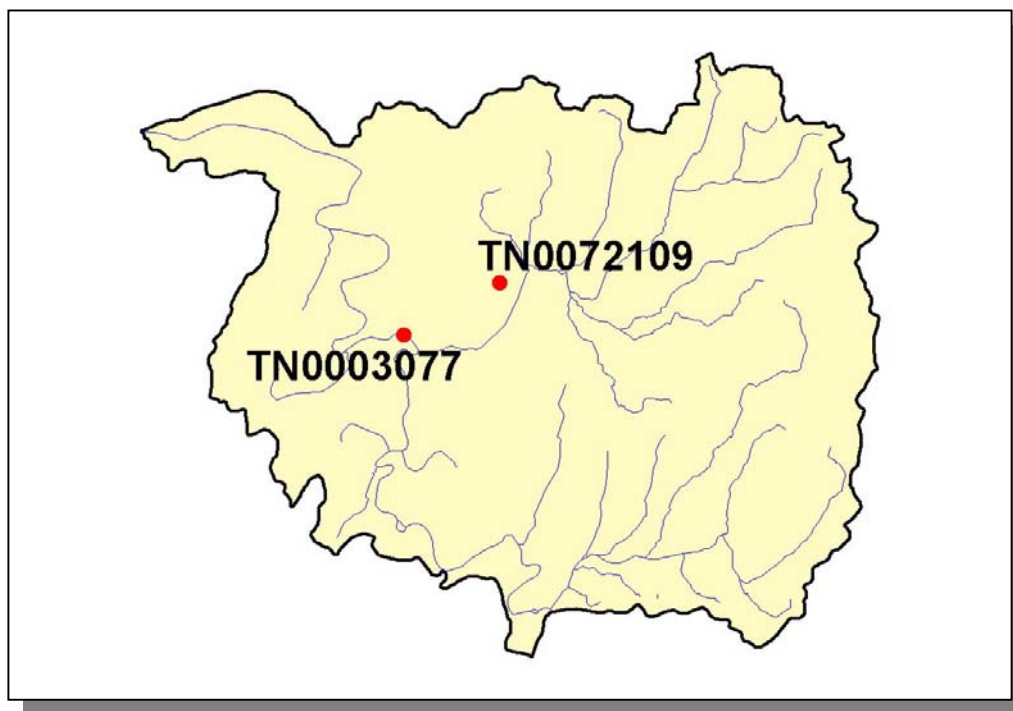
**4.2.C.iv.a. Point Source Contributions.**



**Figure 4-112. Location of Permits Issued in Subwatershed 060200010804.** More information, including the names of facilities, is provided in Appendix IV.



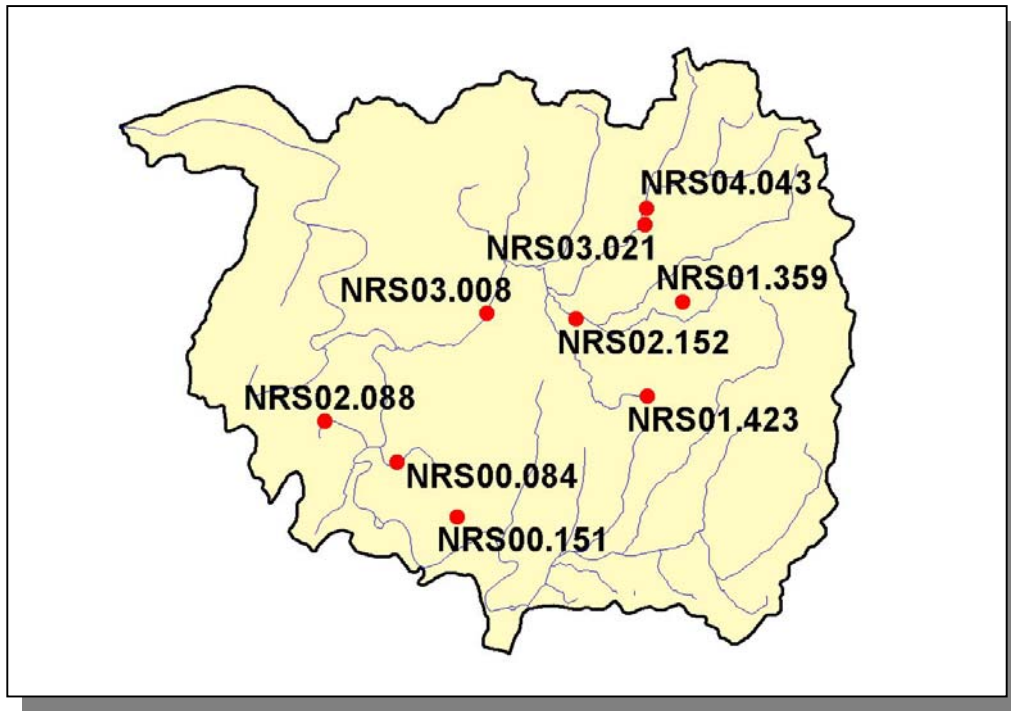
**Figure 4-113. Location of Active NPDES Sites in Subwatershed 060200010804.** More information, including the names of facilities, is provided in Appendix IV.



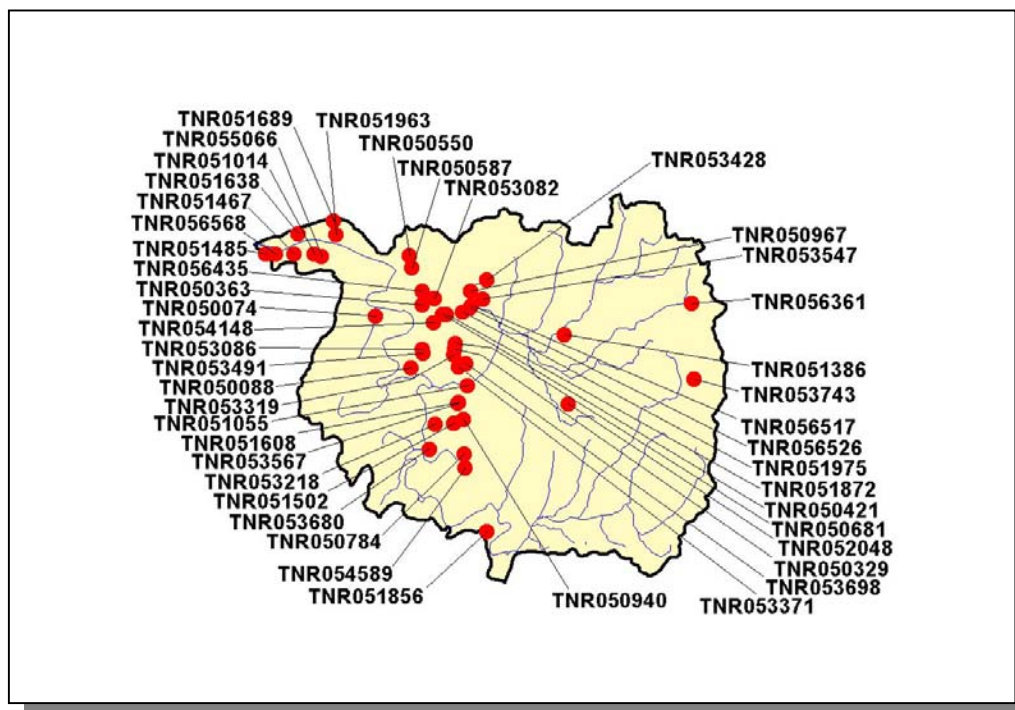
**Figure 4-114. Location of Active Mining Sites in Subwatershed 060200010804.** More information, including the names of mining operations, is provided in Appendix IV.



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**Figure 4-115. Location of Aquatic Resource Alteration Permit (ARAP) Sites (Individual Permits) in Subwatershed 060200010804.** More information is provided in Appendix IV.



**Figure 4-116. Location of TMSP Sites in Subwatershed 060200010804.** More information, including the names of facilities, is provided in Appendix IV.



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**4.2.C.iv.b. Nonpoint Source Contributions.**

<b>LIVESTOCK (COUNTS)</b>						
Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Chickens (Broilers Sold)	Hogs	Sheep
324	690	38	<5	43,781	48	5

**Table 4-93. Summary of Livestock Count Estimates in Subwatershed 060200010804.** According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.

<b>LIVESTOCK COUNTS</b>							
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Chickens (Broilers Sold)	Hogs	Sheep
Hamilton	6,913	14,734	801	30	934,564	1,017	109

**Table 4-94. Summary of Livestock Count Estimates in Hamilton County.** According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.

County	<b>INVENTORY</b>		<b>REMOVAL RATE</b>	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Hamilton	210.7	210.7	2.2	6.0

**Table 4-95. Forest Acreage and Annual Removal Rates (1987-1994) in Hamilton County.**

<b>CROPS</b>	<b>TONS/ACRE/YEAR</b>
Legumes (Pastureland)	0.07
Grass (Pastureland)	0.34
Grass (Hayland)	2.33
Legumes, Grass (Hayland)	0.20
Grass, Forbs, Legumes (Mixed Pasture)	0.27
Corn (Row Crops)	5.28
Soybeans (Row Crops)	7.48
Oats (Close-Grown Cropland)	3.13
Wheat (Close-Grown Cropland)	3.14
All Other Close-Grown Cropland	1.99
Other Cropland not Planted	0.48
Farmsteads and Ranch Headquarters	0.10

**Table 4-96. Annual Estimated Total Soil Loss in Subwatershed 060200010804.**